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Data and Goliath: The Hidden Battle to Collect Your Data and Control Your World

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Citation: Bruce Schneier, Data and Goliath: The Hidden Battle to Collect Your Data and Control (2015).

Relevant Legal and Academic Areas: National Security, Intellectual Property Law, International Relations, Privacy, The Third Party Doctrine

Summary: *Data and Goliath: The Hidden Battles to Collect Your Data and Control Your World* describes a world in which surveillance has become a part of our everyday life, a world we are currently living in. Schneier describes what we know as a result of Edward Snowden and his disclosure of confidential NSA information. He outlines three main concepts: the surveillance society we live in, the harms that arise from mass surveillance, and what we need to do to protect ourselves. This book review will focus on one of the two major surveillance parties in the world, the government.

About the Author: Bruce Schneier has a background in science and technology, writing specifically on how security technology affects people around the world. It is important to note that Schneier is not anti-technology, but rather believes it necessary to keep the public informed on the rise of surveillance and the risks it may pose.

1 Syracuse University College of Law, Juris Doctor Candidate 2018

Introduction

It is important to note at the outset that "the [United States] serves as a singular example of how things went wrong, and is in a singular position to change things for the better."[2] The United States is in a position to change surveillance in both a social and legal context. As it currently stands, the world is now a surveillance society; a society that is blindly accepting. The question then becomes how to fight back.

Imagine a world where technology becomes more than a luxury; it becomes essential to live. Although it seems like science fiction, it may be closer than expected. A riveting Netflix series, Black Mirror, makes this technological reality seem a bit too close for comfort. Black Mirror depicts a future where social media controls how people act, computer technology that controls who and what people see, and memory storage that makes it possible to replay events of the past repeatedly. Although it may seem far-fetched, this is essentially how metadata surveillance works. A massive amount of information is stored, accessible when necessary, or even desired. Although automatic playback may not currently be at our disposal, it may be closer than anticipated. It may be appealing to be able to retrieve and play back memories at any time, but memories are in the past for a reason. They are depressing, scary, or even criminal. Keeping this in mind, understanding the surveillance society of today is essential.

There are three main concepts that Bruce Schneier addresses in *Data and Goliath*: the surveillance society, the potential harms arising from this surveillance, and what needs to be done for protection. The surveillance society has clear implications on the social structure, the legal structure, foreign relations, and trust of the government. Since Edward Snowden, these issues have come to the forefront, and it is now time to address them.

The Surveillance Society

Before 2013, Americans knew nothing about the surveillance they were under.[3] Without Edward Snowden, society would still be blind to this surveillance. Snowden was a contractor for the National Security Agency (NSA) who collected tens of thousands of documents that described the NSA's extensive surveillance activities of both foreign countries and individuals within and outside the United States.[4] These documents demonstrated that the NSA used at least three different programs to collect user metadata (emails, cell phone records, internet conversations) and eavesdrop for the United States government.[5] As a result of releasing this information, Snowden is being sought by the United States government and has been forced to stay off the map.[6] With his disclosures, United States citizens have gained an amazing tool that must now be utilized - *knowledge*.

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2 Bruce Schneier, Data and Goliath: The Hidden Battle to Collect Your Data and Control your World 10 (2015).
3 Schneier, supra note 2, at 99.
4 Id. at 23.
5 Id. at 73.
6 Id. at 99.

Surveillance and Data Collection

Before getting into how exactly the surveillance society works, it is essential to understand what surveillance is. According to the United States military, surveillance is "systematic observation."[7] Surveillance is a tool the government has relied on for hundreds of years in order to tail and track suspect criminals, spy on foreign nationals, and keep tabs on enemies. But, with the Internet and metadata collection comes a new and different type of surveillance. In order to understand that surveillance, an understanding of the evolution of data is necessary.

In the world of surveillance, information is stored as data and metadata.[8] Data is a way in which to store computer information, and metadata is a way to store that data.[9] "One way to think about it is that data is content, and metadata is context."[10] While data are the messages and the content of those messages, metadata are the overall account information, such as who sends and receives messages, on what date, and at what time.[11] In the early days, most data and metadata were not stored because it was expensive.[12] Now, with decreasing costs for storage, it has become easier to save data than attempt to organize it all and decide what to delete.[13]

Some may wonder why it matters that the government and companies store this metadata, because it is simply times, dates, and general sender information. There are a few key concepts that should make users wary about metadata collection. First, individuals have no power to delete anything they do not want stored.[14] Second, according to former NSA and Central Intelligence Agency (CIA) director Michael Hayden, "we kill people based on metadata."[15] Third, many would argue that privacy is a fundamental right that should not be infringed by governmental action.

How Personal Data is Generated

Most people in the United States use computers, laptops, or tablets. Most walk around will a cell phone in their pocket all day long. As technology continues to grow, some even sport fitness trackers, attached to their wrist for sixteen hours a day. With all of that technology people generate data.

Computers are essential for communication in today's day and age. Computers document what users do, what websites users visit, what advertisements users click, what words users type.[16] Beyond the laptop or desktop, computers are making their way into all aspects of life, including kitchen appliances.[17] "Even our pets and livestock

7 Id. at 4.
8 Schneier, supra 2, at 20.
9 Id.
10 Id. at 26.
11 Id. at 20.
12 Id. at 21.
13 Schneier, supra note 2, at 22.
14 Id. at 26.
15 Id. at 27.
16 Schneier, supra 2, at 15.
17 Id. at 18.

are now regularly chipped: my cat is practically a computer that sleeps in the sun all day."[18] On top of all that collection, it is likely people carry a miniature computer with them everywhere they go - a cell phone. A cell phone constantly tracks location and all the information transmitted through that phone.[19] From messages to phone calls, application usage to GPS tracking, a cell phone is constantly creating data.

With computers and cell phones a network is created, what can be viewed as a web. That web flows from communications with others.[20] That web is built from shared documents, emails, and text messages. Those communications create connections. Connections between cell phones, connections between computers, and connections between people. Once that web is spun, there is no way out and the spider can crawl out and collect what has been stuck in the web. The spider in the web of security is the NSA.

These webs are created by something called "hop" searches.[21] Hop searches work to further develop the connections created in the web by collecting metadata on one person, then everyone that person communicates with, then everyone they communicate with.[22] The intent is to strengthen and map the connections in order to find information, such as conspiracies or connections between criminals.[23] Once that metadata web is created, the NSA can conduct "about" searches.[24] These searches allow the NSA to search a specific name or key phrase and generate communications where it may be mentioned.[25] Finally, attempting to escape the web is likely to end in failure. The NSA targets people who search for information on popular privacy and anonymity tools.[26]

What is worse than the fact that this surveillance occurs? The fact that it is tolerated.[27] People tolerate electronic surveillance more than they would allow in the physical world because it is not noticed.[28] Often times people have no idea it is happening because "it just happens, quietly and constantly."[29] It is an inevitable bargain people accept because of the value gained from it.[30] It is both a matter of convenience and a lack of any real choice.[31] If people refuse to accept the surveillance, they are essentially giving up computers, cellphones, online shopping, fitness trackers, television, and the use of credit cards.

This metadata web is kept and monitored by the NSA, acting as the main eavesdropping organization for the United States.[32] Formed in 1952 by President

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18 Id.
19 Id. at 16.
20 Id. at 36.
21 Schneier, supra note 2, at 44.
22 Id.
23 Id.
24 Id. at 45.
25 Id.
26 Schneier, supra note 2, at 45.
27 Id. at 33.
28 Id.
29 Id.
30 Id. at 55.
31 Id. at 58.
32 Schneier, supra note 2, at 73.

Truman, the agency rose in importance during the Cold War.[33] At that time the goal was to collect information on enemies of the United States.[34]After the fall of communism, surveillance shifted.[35] During the 1960's and the 1970's, the NSA and FBI spied on thousands of Americans for antiwar activism, civil rights leadership, and even involvement in nonviolent political groups.[36] Then, in the late 1980's and early 1990's surveillance moved towards defending communications.[37] Finally, after 9/11 surveillance shifted to the metadata web that encompasses everyone today; the one in which the NSA put the entire world under surveillance.[38]

After the NSA, the FBI is the next biggest surveillance body.[39] Although the FBI generally has to jump through a few more hoops, they can perform surveillance with judicial oversight through the warrant process.[40] Through the judicial process, the government uses National Security Letters (NSLs) to obtain information from third parties.[41] This is known as the Third-party Doctrine.[42] This doctrine came from a 1976 case where Michael Lee Smith robbed a Baltimore woman.[43] There had been a "pen register" placed on Smith's phone to receive the numbers he dialed.[44] Smith attempted to get the information thrown out because it was received without a warrant.[45] The Supreme Court said a warrant was not necessary because there was no legitimate expectation of privacy in information voluntarily turned over to third parties.[46] Essentially, technology has helped the government conduct surveillance without warrants, which can be detrimental to privacy.[47]

Metadata Analysis

The general practice of collecting and saving all different types of metadata is called "big data."[48] That metadata is then "data mined," when science and engineering is used to extract useful information from the metadata.[49] Essentially, big data gets value from the inferences that can be derived from it.[50] In the marketing world, patterns are searched for that indicate when someone is about to do something expensive, like buy a car or take a vacation.[51] These patterns then allow marketers or the NSA to draw

33 Id. at 74.
34 Id.
35 Id.
36 Id. at 75.
37 Id. at 74.
38 Id.
39 Schneier, supra note 2, at 79.
40 Id.
41 Id. at 80.
42 Id.
43 Id.
44 Schneier, supra note 2, at 80.
45 Id.
46 Id. at 80.
47 Id.
48 Id. at 39.
49 Schneier, supra note 2, at 39.
50 Id. at 40.
51 Id.

inferences and conclusions about people.[52] The data people are willing to share may imply conclusions that they do not want to share.[53]

The NSA analyzes and uses this metadata to perform certain tasks. Some examples include tracking associations between people, checking whether anyone is tailing oversea spies, tracking "burner phones," and tracking secret meetings.[54] In addition, the agency works to link identities across different data sections to draw inferences, known as data correlation.[55]

The Public-Private Surveillance Partnership

Corporate and government surveillance are not separate. In fact, they are part of a partnership which relies on both entities to function efficiently.[56] The NSA relies on United States corporations to monitor the internet, mainly through the use of their PRISM program.[57] Through this program the NSA legally compels companies like Microsoft, Google, Apple, and Yahoo to provide metadata on individuals of interest, often times in secret.[58] In this way, the government gets companies to act for them so it is "less Big Brother, and more hundreds of tattletale little brothers."[59]

Due to this relationship governments do not want to hinder surveillance conducted by corporations and it is clear that governments are not above forcing corporations to spy for them.[60]

Although many corporations thrive on this surveillance metadata for purposes of advertising, not all of them have the desire to give this information over to the government.[61] Sometimes, providers boast their product based on the security they provide, such as Lavabit, a company focused on secure communications.[62] Lavabit went to the extreme when the government attempted to force them to hand over information - they chose to shut the service down completely.[63] The problem is that companies who cannot simply shut down when they feel threatened and do not want to turn over information really have no choice, they essentially lose control of that part of their business.[64] There are more examples of this within the United States all showing how persuasive the government can be.[65] As long as the NSA is permitted to operate using

52 Id.
53 Id. at 41.
54 Schneier, supra note 2, at 46 (Burner phones are phones used for short periods of time and then are thrown away in an attempt to maintain secrecy).
55 Id. at 47.
56 Id. at 92.
57 Id.
58 Id. at 92-93.
59 Id. at 54.
60 Schneier, supra note 2, at 98.
61 Id. at 99.
62 Id.
63 Id.
64 Id.
65 Schneier, supra note 2, at 100 (The government forced Skype to make changes to facilitate eavesdropping, and in 2008 the government threatened Yahoo with a $250,000 per day fine if they did not join the PRISM program).

secret court orders and secret interpretations of those orders, no changes will occur.[66]

Harms Arising From Surveillance

The biggest loss through surveillance is liberty, which is an issue in the legal field.[67] Essentially, if there is enough data about someone, there is sufficient evidence to find that person guilty of something.[68] This is the exact reason the constitution prohibits general warrants.[69] Ubiquitous surveillance means that anyone can be convicted of law breaking when the police set their mind to it.[70] This constant surveillance is wrong.[71] People should not be forced to monitor their every move. Rather, people should be free to read, speak, and amass knowledge without fear of how it appears in the eyes of the government.[72]

Harms by Government Surveillance

The largest harm arising from government surveillance is the loss of freedom of speech.[73] When people know that the government is watching they are less likely to speak and read about topics they may consider touchy, even if not incriminating.[74] This issue has probably come to the forefront for many law students when conducting research on topics that are essential to learn and grow. Constant consideration of the potential risks, or even fear of what may happen, results in self-censorship.[75]

A major concern with this is whether it may change the relationship of government and citizens.[76] For example, surveillance may lead to an increase in discrimination by the government.[77] Those in certain religious, social, ethnic, and economic groups will be affected more than the ruling elite, and some already have been.[78] The NSA and FBI spy on Muslim Americans who have no affiliation with terrorism.[79] After DEA agents permissibly searched an Albany woman's phone, they saved intimate photos and created a fake Facebook using those photos.[80] The court decided she opened herself willingly to fraud and ruled against her.[81] In 2009, at a school outside Philadelphia students were given laptops with spyware installed so administration could watch them.[82] These actions interfere with a free society.

66 Id. at 102.
67 Id. at 107.
68 Id. at 108.
69 Id.
70 Schneier, supra note 2, at 108.
71 Id. at 110.
72 Id.
73 Id. at 111.
74 Id. at 112.
75 Schneier, supra note 2, at 112.
76 Id.
77 Id. at 114.
78 Schneier, supra at 114.
79 Id. at 122.
80 Schneier, supra note 2, at 123.
81 Id.
82 Id.

As a society, people derive value from dissent and law breaking.[83] It may seem odd to think criminal activity can benefit society, but if old laws could have been perfectly enforced through surveillance, society could not reach a point where they viewed certain activities as okay, such as homosexual relationships and marijuana use.[84] Sometimes, deviating from the norm is essential for progress and a perfect surveillance structure can hinder that progress.[85]

Even though the government has amassed knowledge about citizens, the reverse is not true. The government keeps their surveillance secret from both the citizens and other government agencies.[86] By keeping the knowledge, the government is able to keep the power.[87] The government goes so far as to completely attack whistleblowers, people who disclose wrongdoing by the government.[88] The Espionage Act of 1917 precludes anyone charged with whistleblowing to explain why they leaked the information; they cannot defend themselves.[89]

Harms to Privacy

There is a common implication that privacy only aids wrongdoers.[90] In fact, "[t]he most common misconception about privacy is that it's about having something to hide."[91] That misconception makes no sense.[92] Rather, privacy is an inherent human right that people have so they do not lose control of their present selves.[93] It is human nature to be irritated or feel threatened when that privacy is invaded.[94] By allowing surveillance, humans are forced to feel like prey, animals in the natural world being stalked by a predator.[95]

The constant surveillance created a world in which people have no control over memories and how they are retrieved.[96] Much like an episode of Black Mirror, people will be able to retrieve and replay memories. Nothing will be history anymore. Although it may seem appealing to replay happy memories one may have, having constant access to memories can have a detrimental effect on the human psyche.[97]

Besides potential psychological issues, storage and access to this metadata gives the holder massive power. Companies and governments try to argue that a simple computer algorithm collecting data is no big deal.[98] A Google executive even went so far

83 Id. at 115.
84 Id.
85 Schneier, supra note 2, at 115.
86 Id. at 118.
87 Id. at 119.
88 Id.
89 Id.
90 Schneier, supra at 147.
91 Id.
92 Id.
93 Id. at 148.
94 Id. at 149.
95 Schneier, supra note 2, at 149.
96 Id. at 151.
97 Id.
98 Id. at 153.

to say "worrying about a computer reading your e-mail is like worrying about your dog seeing you naked."[99] That analogy is false.[100] A dog cannot process the sight, will not base future decisions on that person, and the dog cannot tell anyone else what it sees.[101] A computer, on the other hand, stores that metadata, and even if someone is not looking at what the computer collects, they have the option to.[102]

Due to this mass amount of collection, it becomes extremely difficult to remain anonymous on the massive Internet.[103] Retaining anonymity protects privacy, empowers individuals, and is fundamental to liberty.[104] A lack of anonymity means an intrusion on privacy.

Harms to Security

The issue with furthering protection is that security tends to be driven by fear and a focus on rare threats.[105] People allow fear to get in the way of smart security.[106] People also dive in to the assumption that data mining helps to connect the dots to show who may be behaving oddly, allowing the government to find terrorists and people of interest.[107] In reality, millions of people behave strange enough to attract the FBI, yet most are harmless.[108] The problem is that the system is flawed.[109] Error rates are too high, all attacks are unique, and the people who need to be found are trying to avoid detection.[110]

The NSA is actually creating an environment where citizens are less secure in order to fuel its own personal surveillance needs. First, the NSA stockpiles vulnerabilities in the software citizens use everyday, rather than making sure those vulnerabilities are fixed.[111] Any unpatched vulnerability is risky because anyone can find it, including criminals.[112] Second, the NSA inserts back doors into widely used computer hardware and software products, making access inevitable and products less secure.[113] Finally, the NSA hacks the Internet, making sure it remains insecure for the convenience of the agency.[114] Although these techniques may not be geared toward collecting information on everyday people, they become collateral damage.[115]

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99 Id.
100 Schneier, supra note 2, at 153.
101 Id.
102 Id. at 154.
103 Id. at 157.
104 Id.
105 Schneier, supra note 2, at 158.
106 Id.
107 Id. at 159.
108 Id.
109 Id. at 160.
110 Schneier, supra note 2, at 160.
111 Id. at 172.
112 Id.
113 Id. at 173.
114 Id.
115 Schneier, supra note 2, at 177.

What Needs to be done for Protection

The issues with surveillance and privacy are a present concern and something needs to be done to ensure change occurs. Some universal truths should guide that search for change.[116]

The debate is often characterized as security versus privacy, but that is a false trade-off.[117] Always pitting security against privacy is not logical because the two fundamentally align.[118] Not all security measures require people to give up privacy.[119] In fact, a lack of privacy often makes people feel insecure.[120] Noticing this is key to determining how the problem should be approached because "[the] goal [should not] be to find an acceptable trade-off between security and privacy, because we can and should maintain both together."[121]

Security versus Surveillance

Recognition that security is more critical than surveillance can help society approach that goal.[122] Although on occasion surveillance is a necessity, it makes more sense overall to design the system to protect the majority of citizens who need Internet protection.[123] Systems should be designed in a minimalist fashion, only conducting the surveillance necessary for the system to function.[124] When surveillance is a necessity, information gathering should be minimal and all information retained should be given an expiration date.[125]

With that said, "[t]ransparency is vital to any open and free society."[126] Given how the system is currently set up, transparency only seems to travel in one direction.[127] The big fish (governments and corporations) want to see everything the people do, but do not want the people seeing what they do.[128] The resistance by governments and corporations to be transparent creates an imbalance that needs to be changed.[129] The only way to ensure that transparency occurs is to increase the oversight and accountability of these governments and corporations.[130]

In addition, a decision has to be made whether a vulnerable infrastructure or a secure user infrastructure should be created.[131] The issue is not only a domestic one, but

116 Id. at 181.
117 Id. at 182.
118 Id.
119 Id.
120 Schneier, supra note 2, at 182.
121 Id. at 183.
122 Id.
123 Id. at 184-85.
124 Id. at 185.
125 Schneier, supra note 2, at 185.
126 Id.
127 Id. at 187.
128 Id.
129 Id.
130 Schneier, supra note 2, at 189.
131 Id. at 192.

also how the United States interacts with foreign governments.[132] Foreign governments can also access the information we allow the United States government to collect.[133] The question is whether the United States designs a vulnerable system to appease their own surveillance needs, or a secure infrastructure to protect all users.[134]

Government Reform

Government surveillance may at times be a necessity, but for a majority of the time it is not. A balance needs to be struck between giving government agencies what they need to solve crime, without giving them the power to abuse it.[135] Implementation of these solutions can be short-term or long-term, and routes such as executive orders, congressional approval, and the passage of legislation will all need to be used.[136]

As indicated previously, transparency is a necessity and it can be implemented in more areas.[137] Currently, the functions of police and crime-fighting are almost all accessible to the public.[138] Budgets, capabilities, and effectiveness of police forces is all accessible knowledge, and the police still seem to have a working system.[139] That transparency prevalent in the crime-fighting system should carry over to counterterrorism because "the current level of secrecy we have in counterterrorism is excessive."[140] Meeting minimal transparency goals is simple. The government should make descriptions of the scope and scale of the intelligence gathering public knowledge.[141] This is not an issue that would hinder the ability of agencies to perform their duties just as efficiently as before, but rather lets the public know the government is operating in a manner that is not deceptive. The desire to keep names secret is an acceptable need, but the "rules under which organizations operate" should be public knowledge.[142]

In addition, there needs to be more oversight for the NSA.[143] Currently, even Congress is unsure of how the NSA operates, which is a problem.[144] The NSA uses three authorities to justify its surveillance activities.[145] First, Executive Order 12333, authorized in 1981, is extremely permissive.[146] This order permits the NSA to monitor conduct outside the United States, while also collecting metadata on American citizens.[147] Second, section 215 of the PATRIOT Act has been stretched to authorize

132 Id. at 193.
133 Id.
134 Id. at 192.
135 Schneier, supra at 197.
136 Id. at 198.
137 Id.
138 Id. at 199.
139 Id.
140 Schneier, supra note 2, at 199.
141 Id. at 200.
142 Id.
143 Id.
144 Id. at 201.
145 Schneier, supra note 2, at 202.
146 Id.
147 Id.

mass surveillance, even though that was never the intention.[148] Third, section 702 of the FISA Amendments Act was created to solve a problem allowing eavesdropping of information of foreign terrorists that was passing through the United States.[149] Because these authorizations have been abused by government agencies, some rules need to be made.[150] More members of Congress need to commit to meaningful reform, there needs to be comprehensive oversight by independent government agencies, there needs to be transparency, and there need to be meaningful rules to govern how metadata collection is governed and how long it is saved.[151]

Protection of Whistleblowers

The next step is to protect whistleblowers because "leaks and whistleblowing are themselves security mechanisms against an overreaching government."[152] Essentially, whistleblowers act as a random surprise inspection and there need to be more laws to protect them, such as allowing them to use the fact that there was official wrongdoing within the government entity as a defense.[153] "We encourage individuals to blow the whistle on violations of law by private industry, we need to protect whistle blowing in government as well."[154]

Limitation of Metadata Collection

Metadata collection also needs to be limited drastically. A return to targeted surveillance is essential.[155] Essentially, the NSA is allowed to monitor people without having to go through the warrant process.[156] In addition, the bulk surveillance allows law enforcement to watch everyone and develop their own grounds for suspicion.[157] Luckily, there have been steps taken in the right direction. In 2013 the Supreme Court required police officers to obtain a warrant before attaching a GPS tracking device to a suspects car.[158] In 2014, the Supreme Court required officers to obtain warrants before searching cell phones.[159] The next step is to recognize that information should still be and can still be private when entrusted to an online service provider, while the police will still be able to perform their job adequately.[160]

The vulnerabilities the NSA has allowed to go unkempt need to be fixed.[161] Putting security ahead of surveillance is a necessity which is a step in the right direction.[162] Relatedly, systems need to be built so they are trustworthy and effective,

148 Id. at 202-03.
149 Id. at 203.
150 Schneier, supra note 2, at 206
151 Id.
152 Id. at 208.
153 Id. at 209.
154 Id.
155 Schneier, supra note 2, at 209.
156 Id. at 210.
157 Id.
158 Id.
159 Id.
160 Schneier, supra note 2, at 209.
161 Id. at 211.
162 Id. at 212.

rather than purposefully insert backdoors into products.[163] The technical community is outraged about the NSA's subversion of these products and the trust behind American built products has weakened throughout the world.[164]

Finally, espionage and surveillance need to be separated.[165] Espionage and surveillance are two very different things, with government espionage focusing on targeting others, rather than collecting as much as possible for no real designated reason.[166] Targeted monitoring is actually focused and stabilizing, while mass surveillance is almost never justified, whether it be foreign or domestic.[167]

Conclusion

As the world of technology has advanced, so has the world of government surveillance. This means two main things. One, people are watched, metadata is collected, and privacy is subverted in order to fuel the surveillance agenda of the government. Two, the people are the ones who must act to ensure privacy and walk away from the l ife of surveillance they have blindly accepted and become accustomed to. The hidden battles to collect data and control the world are here, "and we need to fight back."[168]

163 Id. at 213.
164 Id.
165 Schneier, supra note 2, at 215.
166 Id.
167 Id.
168 Id. at 11.

Hate Crimes in Cyberspace

Reviewed by Teal Johnson[1]

Citation: Danielle Keats Citron, Hate Crimes in Cyberspace (2014).

Summary: Hate Crimes in Cyberspace is one of the most important publications in the emerging field of cyberlaw. In the book, Citron explains the shocking harassment and acts of abuse that are faced online and shows the different steps society can take to solve the problem. The solutions vary from education, law, inclusive norm development.

About the Author: Danielle Keats Citron is the Morton & Sophia Macht Professor of Law at the University of Maryland Francis King Carey School of Law. Her work focuses on information privacy, cyber law, automated systems, and civil rights. She received the 2005 "Teacher of the Year" award. Her current work focuses on the privacy policymaking of state attorneys general. She serves as an adviser to California Attorney General Kamala Harris's Task Force to Combat Cyber Exploitation and Violence Against Women and the American Law Institute's Restatement Third, Information Privacy Principles Project. She is on the Board of Directors of the Electronic Privacy Information Center and the advisory boards of Cyber Civil Rights Initiative, Without My Consent, IAPP Privacy Bar, Teach Privacy, SurvJustice, and Privacy and Security Forum. She is a member of the law committee for the IEEE Standards Association on the Global Initiative for Ethical Considerations in the Design of Autonomous Systems. She has presented her research at congressional briefings, federal agencies, House of Commons, National Association of Attorneys General meetings, universities, technology companies, Wikimedia foundation, and think tanks. She serves on Twitter's Trust and Safety Council.

Introduction

The internet is largely understood as somewhat of a "Wild West free speech zone" in the sense that society tolerates speech online that is not tolerated offline.[2] Largely this is due to the lack of personal interaction and the anonymity. Many interactions occurring online would likely never occur in real-space.[3] This causes a concern for online stalking and harassment and subsequently how the law can address these problems while respecting free speech and the internet unique characteristics.

Cyber harassment is understood to involve the intentional infliction of substantial emotional distress accomplished by online speech that is persistent enough to amount to a "course of conduct" rather than an isolated incident.[4] Cyber stalking, however, has a narrower meaning. Cyber stalking is defined as an online "course of conduct" that either causes a person to fear for his or her safety, or would cause a reasonable person to fear for his or her safety.[5] Both forms of abuse are addressed

1 Syracuse University College of Law, Juris Doctor Candidate 2018.
2 Danielle Keats Citron, Hate Crimes in Cyberspace 26 (2014).
3 Id. at 57.
4 Id. at 3.
5 Id.

interchangeably in *Hate Crimes in Cyberspace* ("Hate Crimes") because they use similar means to achieve similar ends.

Cyber harassment can take many forms that include threats of violence, privacy invasions, reputation-harming lies, calls for strangers to physically harm victims, and technological attacks.[6] Victims' email inboxes often are overwhelmed with threatening messages. Their employers receive anonymous e-mails accusing them of misdeeds.[7] Fake online advertisements list victims' contact information and availability for sex. Their nude photos appear on sites devoted to exacting revenge. On message boards, blogs, and other websites, victims are falsely accused of having sexually transmitted infections, criminal records, and mental illnesses.[8] Their social security numbers and medical conditions are published for everyone to see. Sometimes online harassment can include real-space contact including abusive phone calls, vandalism, threatening mail, and physical assault.[9]

The main difference between online and real-life harassment is that internet harassment extends the life of destructive posts.[10] Information online can be around forever unlike a real-life spoken comment or a threatening letter. Additionally, the internet has an ability to forge connections which creates group cyber stalking and cyber mobs.[11] Although the law addresses real-life harassment and stalking there is a need for the creation and enforcement of law regulating online behavior.

Understanding Cyber Harassment

To put cyber harassment into context, Danielle Keats Citron includes several detailed examples of a variety of victims in her book. For example, a story of a tech blogger, Kathy Sierra, who became harassed after her blog became quite popular is included.[12] She began receiving hateful and threatening emails and blog comments and eventually had to shut down her blog. A cyber mob started to attack and the threats spread to other blogs. Kathy Sierra received extremely vivid and disturbing threats from multiple online sources.[13] This affected her life and career greatly.

Another example is the revenge porn victim, a graduate student named Holly Jacobs. She was in love with her boyfriend and had sent him sexual photographs and webcam videos over the course of their over two year relationship.[14] She had trusted him to keep them confidential but he ended up posting them on revenge porn websites. She searched and found her photos and videos all over hundreds of sites. Harassers called her school and made false claims about her sexual behavior.[15] Additionally, her

6 Id.
7 Id.
8 Citron, supra note 2, at 3.
9 Id.
10 Id. at 4.
11 Id. at 5.
12 Id. at 35.
13 Id. at 36.
14 Citron, supra note 2, at 45.
15 Id. at 46.

information and photos were posted on websites and she was receiving countless emails saying they could not wait to have sex with her.[16] The revenge porn victim's online reputation was destroyed and she could never get all the photos, videos, and other personal information removed from the hundreds of sites.[17]

The internet has virtues of connecting billions of people, allows for the quick spread of information, and the sharing of countless different opinions. Additionally, anonymity can be a virtue which happens to also fuel its vices.[18] With the ability to be anonymous, people tend to speak more honestly which can be a positive. Anonymity frees people to defy social norms and can bring out the worst in people.[19] Many times internet users' physical separation exacerbates the tendency to act on destructive impulses.[20]

Social attitudes surrounding online harassment is a problem with the lack of attention being paid to such a detrimental issue. The public accuses victims of exaggerating problems they face on the internet. There is a belief on the internet that victims are just "overreacting" to speech that is not "vagina friendly".[21] Basically, the stigma is that people (mostly women) are just being too sensitize about "mean" or "inappropriate" talk online. The belief is that the internet is the "Wild West" and victims just need to be tougher or have a thicker skin. Cyber harassment does affect women much more than men so society is eager to minimize, trivialize and tolerate the harassment.[22] Strong defenders of the "Wild West" nature of the internet say that the harassment victims complain about is just non-threatening satire and nothing to overreact about.[23] Many also say that abusive commentary is "part of the territory.[24] There is a very strong tendency to victim blame with online harassment and especially with revenge porn cases.

Revenge porn is the posting of nude photos of another person, typically after a relationship with that person has ended, on the internet. Society largely responds to revenge porn cases by saying that if you do not want circulation of the photos to occur then do not send or allow others to take the nude pictures of you.[25] This is victim blaming and is no excuse for this total invasion of someone's privacy for the whole internet to see. The public (and sometimes police officers) misunderstand the law in this realm. In the case study of the revenge porn victim, she was told by the police that since she sent the photos to her ex, he had ownership of them and could do with them as he pleased.[26]

Changing social attitudes toward this type of harassment is crucial for allowing

16 Id. at 45.
17 Id. at 46.
18 Id. at 58.
19 Citron, supra note 2, at 58.
20 Id. at 59.
21 Id. at 75.
22 Id. at 147.
23 Id. at 75.
24 Citron, supra note 2, at 79.
25 Id. at 77.
26 Id. at 85.

sufficient laws to be created and enforced.[27] There are many reasons for the lack of attention this issue receives. First, there is a low reporting rate for cyber harassment, around 40% of victims report their abuse.[28] Second, federal cyber stalking laws are woefully under enforced.[29] Lastly, if an incident is reported and charged, prosecutors do not tend to pursue these types of cases.[30]

Moving Forward

There is a need for legal reform around cyber harassment and provide more help to those suffering as victims. The author, Danielle Keats Citron, provides suggestions on how the law can work better and other solutions to provide more repercussions for abusers and protection for victims.

A. *Civil Rights Movements*

The women's movement of the 20th century has much to reach those trying to combat cyber harassment.[31] That movement utilized education and law to help combat the negative social attitudes surrounding the issue. In the 1970's the women's movement challenged social attitudes that protected the subordination of women.[32] During this time, sexual harassment and domestic violence were exposed as real and systemic issues affecting women by lawyers and other activists.[33] Much headway on both was made through education, the courts, and politics.

Following in the footsteps of those movements, there must be a change how the public sees and understands online abuse.[34] It has been shown that when social movements effectively attack and delegitimize a social practice, judges and politicians alike will join in the movement.[35] To change social attitudes, the myth that victims bring abuse on themselves must be dispelled.[36] Additionally, it cannot be expected that a victim can just log off online life and never go back. Our society makes it essentially imperative to have an online presence.

There is evidence of some advocacy against cyberstalking through a variety of state and federal laws. Recent advocacy has been primarily focused on revenge porn and creating legislation outlawing revenge porn and pushing courts to allow pseudonymous litigation.[37] Although there is much work to be done, the groundwork is laid for the vast strides that need to be made.[38] Enlisting the blogosphere is another great starting place. A bloggers code of conduct was developed in which there are rules for websites

27 Id. at 91.
28 Id. at 83.
29 Citron, supra note 2, at 84.
30 Id. at 90.
31 Id. at 95.
32 Id. at 96.
33 Id.
34 Citron, supra note 2, at 100.
35 Id. at 99.
36 Id. at 100.
37 Id. at 105.
38 Id.

to moderate discussion and remove harassment.[39] There is a split in the blogosphere of support for the code of conduct. However, it is potential for creating a social pressure within the blog culture to hold bloggers and commenters accountable for their posts.

Some argue that talking back to abusers is a helpful approach for victims to take their abuse into their own hands. In terms of mental health, responding and "fighting back" against the abuse can be healthy and increase confidence. However, it is important to acknowledge the limitations and dangers to talking back. The damage is often already done. This cannot restore professional problems.[40] Although some people can feel better and provide psychological relief but it does not take away mental suffering. Sometimes talking back is impossible because of how anonymous postings can be. It can backfire as well if abusers catch on to a victim fighting back. Groups of abusers can attack back with much more vigor once they realize this.

Supporters of abused should join together. Social pressure may convince operators of sites to discourage harassment on their sites. Websites are based on traffic and the threats of losing traffic may prompt action from website owners.[41]

B. *What Law Can and Should Do Now*

Tort claims redress victims of cyber harassment who have suffered damaged reputations, privacy invasions, and intentionally inflicted emotional distress.[42] Victims can also seek redress through copyright law. A libel claim is a form of defamation they can pursue, in addition to an intentional infliction of emotional distress claim. A limitation, however, is that plaintiffs cannot sue for the disclosure of embarrassing truthful facts if the public has a legitimate interest in learning about them.[43] Nude photos are largely understood as non-newsworthy and provide grounds for recovery through tort law.[44]

Copyright law can provide redress if a harasser posts a victim's copyrighted photograph or video. The person who takes the picture is usually considered the copyright owner and only that person can sue for copyright violations.[45] This is helpful for those who took nude pictures of themselves but not if someone else took the photo.[46] However, civil suits are not possible for everyone. Victims bear the costs of bringing claims and costs can be heavy. Even if some victims can afford to sue, the abuser may have few assets and it would not be worth it to pursue the claim in that case. Other issues include not knowing who the abuser(s) is, fear of revealing their own identity, and the difficulty finding an attorney to take the case.[47]

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39 Citron, supra note 2, at 106.
40 Id. at 109.
41 Id. at 114.
42 Id. at 120.
43 Id. at 121.
44 Citron, supra note 2, at 121.
45 Id.
46 Id. at 122.
47 Id. at 123.

Abusers can be challenged through criminal law as well. Criminal law punishes stalking, harassment, threats, extortion, solicitation, harmful impersonation, and computer crimes. This is a powerful method for deterrence because of the long lasting collateral consequences of being on an abusers record forever.[48] Even if the abuser has no money, they would not want the crime on their record. Additionally, this route can avoid the issue of exposing the victims identify because the cases are brought in the government's name.

Civil rights laws redress and punish the economic, social, and psychic costs inflicted on individuals when they are denied the right to pursue crucial opportunities because of their membership in a protected group.[49] Civil rights violations are rarely enforced in cases of online abuse.[50] If civil rights laws included cyber abuse, it could result in an effective way to remedy these issues.[51]

C. *Updating the Law: The Harassers*

Criminal harassment and stalking laws should be updated to reach the totality of the abuse. Often harassment and stalking laws are limited to only communication directly to the victim. We need criminal laws which reach posts that include threats, defamation, and other privacy violations on third-party platforms.[52] This would include message boards and blogs, which a lot of times are at the heart of the abuse.[53] Harassment and stalking laws need to be altered in order to cover all methods of abuse.[54] Lawmakers should avoid using overbroad or vague language that raises due process and free speech concerns. In order for the laws to be successful, they should be paired with mandatory training sessions regarding the phenomenon of cyber harassment and the problems it causes.[55]

The internet is understood by many as a place largely lacking restrictions on speech.[56] This is because people tolerate a lot more online than would be accepted offline.[57] This is largely due to the lack of personal interaction and the level of anonymity. Many interactions that occur online would likely never occur in an offline setting.[58] This causes a concern for online stalking and harassment. Which in turn is a concern of how the law can address these issues while respecting free speech and the uniqueness of the internet.

Revenge Porn should be banned. New laws need to be created making nonconsensual disclosures of someone's nude images a criminal offense. Since this issue largely affects women, there is public ignorance and society is eager to minimize the

48 Id.
49 See Citron, supra note 2, at 126-27.
50 Id. at 127.
51 Id.
52 Id. at 143.
53 Id.
54 Citron, supra note 2, at 143.
55 Id. at 144
56 See Id. at 26.
57 Id.
58 Id. at 57.

issue.[59] Consent is context specific so that can create an issue for the lawmaking process. Criminal invasion of privacy laws should reflect the contextual understanding of consent, and ban nude photos published without the subject's permission.[60] At the time that this book was written, five states (Alaska, California, Idaho, Maryland, and Utah) had banned revenge porn.[61] Other states should follow their lead. Lawmakers must clarify the mental state required by revenge porn criminal statutes and specify which activities fall outside the revenge porn laws.[62]

Civil rights laws should be amended to reach and penalize those online harassers who interfere with an individual's right to pursue life's crucial opportunities - work, education, and self-expression - due to group bias.[63] California can be a model for other states because of their robust civil rights laws.[64] States should prohibit cyber stalking that interferes with a victim's civil rights and permit the attorney general to seek civil penalties against perpetrators.[65]

Federal reform for cyber harassment is unlikely to happen anytime soon because of the lack of cooperation in Congress.[66] However, Congress should ban cyber stalking that interferes with someone's equal right to pursue professional opportunities.[67] Additionally, pseudonymous should be allowed so victims can pursue redress without drawing further attention to the harassment.[68] Courts generally disfavor this because it is assumed to interfere with the transparency of the judicial process and deny the defendants' rights to confront their accuser.[69] This should be allowed despite those concerns because victims should be able to bring claims without having to risk further invasions of privacy. Pseudonymous litigation does not make a case totally opaque because the details of the case can still be seen, just not the victim's name.[70]

A big limitation of this regulatory agenda aimed at harassers is tracking down the harasser. Harassers can use public computers in internet cafes or libraries without any registration. This does not allow for successful tracing of IP addresses or any other link to the perpetrator.[71] Even if there is not an anonymous user at a computer such as those, it still is not straightforward to trace online posters and not always possible. For example, even if harassers do not try to mask their online activity, group networks can be a challenge to trace when the same IP address is used in workplaces or universities.[72] There are many techniques to track down abusers but it not a guarantee to find the abuser.

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59 Citron, supra note 2, at 146.
60 Id. at 148.
61 Id. at 149.
62 Id. at 150.
63 Id. at 154.
64 Citron, supra note 2, at 155.
65 Id.
66 Id. at 157.
67 Id.
68 See Id.
69 Id.
70 Id.
71 Id. at 165.
72 Id.

D. *Legal Reform for Site Operators and Employers*

Website operators are in an optimal position to lower costs of cyber harassment and cyber stalking.[73] They control content appearing on their sites and can remove abuse before it spreads across the internet.[74] Site operators can moderate speech and suspend use for harassers.[75] They have this ability because they are not state actors.[76] Putting pressure on site operators to control the content on their individual site is a good way to have the issue self-regulated without interference from the government.

In 1995, the Communications Decency Act (CDA) was introduced to extend existing protections against harassing phone calls and other communications.[77] Additionally, the CDA included tighten regulations on radio and cable television. There was an amendment incorporated into section 230 of the CDA ("Section 230") which gave websites immunity from both publisher and distributor liability for user-generated content.[78] Therefore, website operators have defended their practices and are immune in most situations even when there is known activity by users that includes harassment or privacy invasions.[79]

However broad, Section 230 is not absolute. The immunity granted in Section 230, does not include violations of federal criminal law, the Electronic Communications Privacy Act or intellectual property law.[80] For example, a revenge porn victim can pursue a copyright claim and be victorious with self-shot images or video. However, many revenge porn sites do not take threats seriously because they know most victims cannot afford to follow through on their threats to sue because they cannot afford an attorney to pursue the copyright claim.[81]

Although revenge porn has been held by trial courts as not protected under Section 230 immunity because of their encouragement of posting content, appellate courts will not go that far in holding website operators responsible without proof that they "materially contributed to the development of the allegedly illicit content".[82] Therefore, there are many revenge porn sites still operating. A proposal is to have Congress amend Section 230's safe harbor provision to exclude the immunity from applying to the worst actors: sites encouraging cyber stalking, or nonconsensual pornography and generate income from the contents removal or website that host the acts of nonconsensual pornography and cyberstalking.[83]

It is common for employers in society today to use social media to make hiring and firing decisions. Victims deserve a change in order to have a chance to develop their

73 Citron, supra note 2, at 168.
74 Id.
75 Id.
76 Id.
77 Id. at 170.
78 Id. at 170-71.
79 Id. at 171.
80 Id. at 172.
81 Id.
82 Citron, supra note 2, at 174-75.
83 Id. at 177.

careers during this networked age.[84] Some countries, including Finland, ban employers from considering search results, without getting employee approval, in their hiring and firing decisions.[85] That is not likely in the United States based on the way we operate our country. The alternative approach would be to adopt policies that mitigate the possibility that cyber harassment would unfairly impact women and minorities in their careers. This would be similar to when the Equal Employment Opportunity Commission (EEOC) created protections against the use of arrest records to affect hiring matters.[86]

There are concerns about over criminalization. This can be an issue that arises when proposing new law because of the belief that are society is already prone to over criminalization. Additionally, with our prison population as high as it is, many commentators are hesitant to add more laws and likely increase it further. Another concern is that prosecutors will seek out harassers, especially in revenge porn situations, and charge defendants in "arbitrary and objectionable ways."[87] Although both legitimate concerns, it seems abandoning legal reform because of them would be ill-advised. The consciousness of these problems can help guide lawmakers and prosecutors when looking toward realistic solutions. "Lawmakers can curtail some prosecutorial overreaching by drafting clear and narrowly tailored laws."[88]

E. *Free Speech Challenges*

There are major concerns of laws regulating speech on the internet being an impediment on the rights protected by the first amendment. Critics argue that the internet would cease to foster expression if law intervened. However, the proposals in Hate Crimes do not seek to expand categories of unprotected speech, they work within existing First amendment doctrine and permits regulation of certain categories of "low-value" speech.[89]

The lines of free speech get fuzzy as well because the internet is not a place of solely public areas as it is understood by many people. There are in groups and out groups depending on the context. This includes sites for workplaces, schools, or clubs. Websites may be password protected areas and some may not be. This creates less public areas and restrictions can be easier to create with less public areas.[90] Online interactions do create more opportunities for expression but that does not warrant special treatment of online expression.[91]

Even though cyber harassment adds little to free speech values and the marketplace of ideas, restrictions must comport with First Amendment doctrine.[92] A foundation of First Amendment doctrine is that the government cannot censor or

84 Id. at 181.
85 Id. at 182.
86 Id. at 183.
87 Citron, supra note 2, at 186.
88 Id. at 188.
89 Id. at 190.
90 Id. at 192.
91 Id.
92 Citron, supra note 2, at 199.

regulate the expression of ideas just because society finds them offensive or distasteful.[93] However, the government can regulate some speech but the regulations are subject to a "strict scrutiny review" to determine if they serve a compelling interest that cannot be promoted through less restrictive means.[94] Types of speech that can be restricted that will help the fight against cyber hate crimes include: true threats, crime facilitating speech, and lies. Defamation is still a claim whether it be perpetrated through online or offline means.[95] Granted there are limitations with defamation similar to those in the offline context.

The nonconsensual disclosure of nude images is not afforded the rigorous First Amendment protection.[96] This is a narrow situation where truthful information can be punished.[97] Courts could also uphold statutes prohibiting revenge porn under the umbrella of confidentiality law or on a constitutional argument that revenge porn amounts to unprotected obscenity.[98] Additionally, pursuing civil rights claims is possible because the First Amendment does not pose an obstacle to those, as made clear by the Supreme Court.[99]

F. *Silicon Valley, Parents, and Schools*

Victims and advocates look forward to legal remedies and restrictions on cyber hate crimes. However, there are real victims suffering now and the wheels of justice turn slowly. There are other actors that can aid in the fight against online harassment. Some internet companies where abuse can occur are engaging in efforts to combat online destructive activity.[100] For example, Facebook, Blogger, and YouTube do not view free expression as a right to harass, stalk or threaten on their websites.[101] Through user agreements and software design, the companies are encouraging norms of equality and respect.[102]

Digital gatekeepers and internet companies have substantial freedom to regulate their sites and when to stop cyber stalking and harassment. The First Amendment is binding on the government but not these private companies.[103] Companies employee a variety of tactics to protect against online attacks. They include policies with enforcement mechanisms, user empowerment, real-name requirements, and others.[104] There is a strong argument for limiting anonymity because it would not restrict what is put out on the internet, just that people would need to be accountable for their words.[105] A potential option is anonymity can be a default setting subject to removal if abused.[106]

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93 Id.
94 Id.
95 Id. at 205.
96 Id. at 209.
97 Id. at 208.
98 Citron, supra note 2, at 211.
99 Id. at 218.
100 Id. at 226.
101 Id.
102 Id.
103 Citron, supra note 2, at 227.
104 Id. at 230.
105 Id. at 238.
106 Id. at 239.

Being anonymous would then be a privilege.

Getting parents and schools involved is another way to monitor online harassment and engaging with children in teaching opportunities about what is and is not acceptable online.[107] If parents take the time to learn about cyber issues and instilling restrictions or monitoring will likely result in children respecting the internet from youth. Although it can be difficult for parents to talk about harassment and threatening behavior with their children, it can pay off in the long run.[108] Additionally parents can require their children to give them their passwords. This can allow for effective monitoring, but it may not be the option for everyone.[109]

Schools are becoming more involved in helping parents and students learn about online safety and harassment.[110] Some schools have even drafted and adopted cyber bullying curricula to collect federal funds specifically for technology.[111] Schools digital initiatives are built around the values, ethics, and social norms that allow for constructive interaction and the promotion of trust in virtual communities.[112] The hope is for the school resources to help defeat online abuse and reinforce to students that an internet with norms of equality and respect is possible.[113]

Conclusion

Since the birth of the internet, activists, scholars, and early adopters have supported a cyber civil liberties agenda and central was the idea of "all information should be free."[114] Although free speech concerns still exist, civil libertarians have accomplished much in the past couple decades.[115] Since the widely-held belief is that the internet is a "wild west", eliminating bigoted cyber harassment will be a difficult task.[116] The goal is that through the potential solutions discussed, the future generations will view cyber harassment as an unacceptable remnant of the Internet's early days.[117]

My Thoughts

The author points to many solutions but does not seem to prioritize the most promising or likely to occur. Based on the author's description of possible solutions, it seems that drafting statutes that will regulate the unwanted conduct without restricting the first amendment would be the ideal first step. Additionally, reducing anonymity and increasing the pressure on internet companies to regulate cyber hate crimes will be good next steps.

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107 Id. at 242.
108 Citron, supra note 2, at 244.
109 Id. at 246.
110 Id. at 248
111 Id.
112 Id.
113 Citron, supra note 2, at 250.
114 Id. at 253
115 Id.
116 Id.
117 Id. at 254.

Some of the proposed solutions appear to be idealistic. For example, there is not strong evidence that monitoring by parents or cyber education by schools will improve the current landscape of cybercrimes. The proposed solutions, taken in sum, do provide a good view into many possible solutions, which is an advantage to mentioning many.

Based on the current issues with cyber hate crimes and the frequency of which they occur, it is quite likely that more and more people (and victims) will be pushing for regulations of the internet. Additionally, it is becoming increasingly common that people are aware of these problems. Once society becomes more aware of the problem, change is more likely to occur. The hope is that one day cyber harassment will be a minimal issue, if at all.

The Innovation Act (H.R. 9): The impact it will have on non-frivolous lawsuits

Thomas L. Carlon[1]

Abstract:

The Innovation Act (H.R. 9) was introduced to the House of Representatives in 2016 by Rep. Bod Goodlatte. The intent of the Innovation Act intends to eliminate patent trolls from the patent system, allowing greater protection for patent owners. However, the Innovation Act does not provide sufficient protection that is necessary for patent owners. The Innovation Act's heightened standard in complaint specificity and fee-shifting provision, do not adequately protect patent owners from the patent trolls. Moreover, there are other bills that were introduced in the Senate and the House of Representatives that could provide protection that patent owners require. Therefore, the Innovation Act should not be reintroduced to the House of Representatives, instead, a different bill should be introduced and passed by Congress.

Introduction

Patent law has been a highly debated topic since the promulgation of the Leahy-Smith American Invents Act, hereinafter "AIA," in 2011. Since that time, controversy has begun regarding whether or not non-practicing entities, hereinafter "NPEs," commonly referred to as patent trolls, impose an economic burden on businesses, requiring amendment of the AIA. The House of Representatives, hereinafter referred to as the "House," presented the Innovation Act in 2013 but it was never passed, until Rep. Bob Goodlatte reintroduced the bill in 2016. A goal of the Innovation Act (H.R. 9), hereinafter referred to as "Act," is to suppress patent trolls, and prevent them frivolous patent infringement lawsuits against small businesses and start-ups.

Patent trolls are organizations which do not produce or manufacture goods or services for the benefit of commerce; the sole purpose of these patent trolls is to gain from others' inventions or for technological advancements.[2] Patent trolls are entities that buy rights to granted patents, giving them ownership.[3] After purchasing the rights to these patents, patent trolls file lawsuits or submit demand letters against inventors, small businesses, and even large corporations alleging infringement of their patents.[4] In doing so, patent trolls profit from the hard work and dedication of others.

As a society we want the patent-enforcement process to safeguard inventors' patents from frivolous lawsuits. The United States of America switched from the first to invent, to a system of first to file for patents, in order to ensure protection to the rights

1 Syracuse University College of Law, Juris Doctor expected May 2018. The author would like to extend their sincere gratefulness to Professor Laura Lape, Associate Professor at Syracuse University College of Law, for her strong support, guidance and encouragement during the development and publication of this Note.

2 Stop Patent Trolls: Support the Innovation Act of 2015, Electronic Frontier Foundation, https://act.eff.org/action/stop-patent-trolls-support-the-innovation-act-of-2015 (last visited July 12, 2016).

3 Id.

4 Id.

of inventors; moreover, this protects their patents against frivolous lawsuits. However, further legislation is needed to protect people from frivolous lawsuits, but, by enacting further legislation, what effect or burden will that place on non-frivolous lawsuits.

II. Patents

A patent is granted under 35 U.S.C. § 101. Section 101, states "whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter . . . may obtain a patent therefor . . . ."[5] In 2011 The United States of America switched from a first-to-invent ("FTI"), to a fir st-to-file ("FTF") system for patent applications filed on or after March 16, 2013 under the AIA.[6] This placed The United States in the same category as other countries which have established patent law systems.[7] The objective of switching to a FTF system was to simplify the application process, and to eliminate the need for interference proceedings.[8] Opponents to the FTF system proposed that it would be unconstitutional under Article I, section 8 of the Constitution,[9] which states that, Congress has the power "[t]o promote the Progress of. . . useful Arts, by securing for limited Times to. . . inventors the exclusive Right to their respective. . . Discoveries."[10] The new system created by the AIA encourages and rewards those who invent, and then file for a patent with the United States Patent and Trademark Office ("USPTO").

The AIA helped eliminate a lot of procedural problems and helped strengthen the patent examination process. However, further amendments were needed to ensure that future patent rights were protected, which is why in May of 2015, the House Judiciary Committee approved, by a majority vote, the advancement of the Innovation Act introduced by Rep. Goodlatte, Bob (R-VA-9) and sponsored by a bipartisan coalition.[11] The Innovation Act is intended to help suppress patent trolls, prolonged patent infringement lawsuits, and frivolous lawsuits. The bill also intends to change the fee system for filing patent infringement lawsuits to hold the plaintiff responsible for lawsuits that are viewed as frivolous.[12] This bill is vital to the stability of finances for individuals and businesses, and to ensure that the defendant has an opportunity to defend themselves adequately against frivolous lawsuits.

The process for filing a patent infringement lawsuit is similar that for any other lawsuit, however, by current standards most complaints are quite vague; the Innovation Act intends to increase the amount of information that must be disclosed in the pleading. Currently, courts permit just the information necessary for patent infringement:

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5 35 U.S.C. § 101 (1952).

6 Steven Auvil, 5 things med tech companies need to know about the Leahy-Smith America Invents Act, MedCity News (Nov. 15, 2011, 2:01PM), https://medcitynews.com/2011/11/5-things-med-tech-companies-need-to-know-about-the-leahy-smith-america-invents-act/.

7 Id.

8 Id.

9 Karen E. Simon, The Patent Reform Act's Proposed First-To-File Standard: Needed Reform or Constitutional Blunder?, 6 J. Marshall Rev. Intell. Prop. L. 129 (2006).

10 U.S. Const. art. I, § 8, cl. 8.

11 Electronic Frontier Foundation, supra note 1.

12 H.R. Rep. No.114-235, at 173 (2015).

the patent number that allegedly is infringed, the date the patent was issued, a brief description of the patented invention, as well as an assertion that the defendant infringed the patent.[13] Increasing these requirements, is an attempt at reducing the volume of frivolous lawsuits and to reducing the number of patent trolls.

III. The Innovation Act

The Innovation Act is a step forward in eliminating patent trolls, and consequently adding protection to inventors and their patents. This bill was proposed because the Judiciary Committee recognized the need to assist small businesses and individuals who owned patents and were being harassed by patent trolls with frivolous lawsuits. Typically, small businesses and individuals settle out of court with patent trolls because litigation is expensive and time-consuming.[14] A goal of this bill is to provide small businesses recourse if they are being summoned to a frivolous patent infringement lawsuit.

Lawsuits brought by patent trolls are costly and are extremely harmful to small businesses - such as startups and non-tech companies.[15] These businesses do not have the financial resources to fight these frivolous patent infringement lawsuits. Essentially, they are left on their own, weighing their options, with typically one option - to settle out of court.[16] Thus, small businesses often pay high settlements to patent trolls, even when the lawsuits have little to no merit.[17] "The American Intellectual Property Law Association (AIPILA) estimates that the average cost of defending a patent infringement case is $650,000 . . . ."[18] Further, legal fees can range as high as $5.5 million for patent infringement suits asserting damages in excess of $25 million.[19] Patent trolls are aware of the litigation costs for defending against lawsuits; since their goal is to extort money from these businesses, and patent trolls blatantly state they are willing to settle for an amount under the cost of litigation.[20] These lawsuits brought by patent trolls have little to no merit, one witness of the house report noted, that it is in the best interest of small businesses to fight the lawsuits as opposed to settling.[21] The Innovation Act, would change that outcome for future generations, as this bill is aimed at reducing these types of lawsuits, and would eliminate the need for small businesses to face any pending litigation.

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13 Steven Seidenberg, New Innovation Act, aimed at 'patent trolls,' would require more details in infringement complaints, ABA Journal (June 1, 2015), https://www.abajournal.com/magazine/article/new_innovation_act_aimed_at_patent_trolls_would_require_more_details.

14 Electronic Frontier Foundation, supra note 1.

15 Id.

16 Id.

17 The Innovation Act, House of Representatives Judiciary Committee (July 7, 2016), https://judiciary.house.gov/the-innovation-act/.

18 Id.; See also Steven Seidenberg, New Innovation Act, aimed at 'patent trolls,' would require more details in infringement complaints, ABA Journal (June 1, 2015), https://www.abajournal.com/magazine/article/new_innovation_act_aimed_at_patent_trolls_would_require_more_details.

19 Seidenberg, supra note 17.

20 See M. Craig Tyler, Patent Pirates Search for Texas Treasure, Texas Lawyer, (September 20, 2004), https://www.wsgr.com/news/PDFs/09202004_patentpirates.pdf.

21 H.R. Rep, supra, note 11 at 23.

The Innovation Act is directed towards patent trolls and their frivolous lawsuits filed within the federal court system. These lawsuits are a drain on the economy; they affect the court system, businesses, inventors, and the economy.[22] It is the House of Representative's Judiciary Committee's objective to make certain that small businesses and start-ups are protected from patent-enforcement abuse, such as frivolous patent infringement lawsuits. The Judiciary Committee established the need for this legislation based on the large increase in the misuse of patent-enforcement alternatives.[23]

The AIA was a first substantial step in the correct direction to ensure that the U.S. patent system operates to advance innovation and technology, as opposed to suppression. However, it was predicted that even with the AIA being signed into law, there was still work that needed to be accomplished. Thus, the Innovation Act was proposed to help fill in the gaps left by the AIA, and to ensure protection of innovation and technological advancements. As a person with a technical background, I find that it is vitally important that as a society we do not allow patent trolls to dictate the economy and suppress innovation and technology that could, quite possibly, change the world. For that reason, it is important that we continue to expand and develop technical breakthroughs in the sciences to become a stronger, more intelligent, and developed society.

Heightened standard of specificity in a complaint

The Innovation Act intends to suppress patent trolls by requiring a higher standard of specificity in complaints. Currently, patent infringement complaints tend to be quite vague.[24] All that is required by most courts is that the complaint contain "the number of the allegedly infringed patent, the date such patent issued, a cursory description of the patented invention, and an assertion that the defendant is infringing the patent."[25] Due to a low standard of information to be included in the complaint, patent trolls do not need to expend time and resources establishing a valid argument as to how and why the alleged infringer, actually infringes. This, allows patent trolls to file complaints and persuade small businesses and start-ups, which do not have the resources to withstand litigation, to settle outside of the courtroom. Requiring a heightened standard of specificity in the complaint may dissuade patent trolls from filing non-frivolous lawsuits, because these trolls do not wish to expend additional resources to formulate arguments as to how the alleged infringers patent, actually infringes.

The Innovation Act's proposed language intends to suppress patent trolls and make it more costly for them to file frivolous complaints. As the act currently stands, it would abolish Civil Form 18, which sets forth the current standard for patent infringement complaints.[26] The heightened specificity would require detailed information about which claims in a patent are allegedly infringed, what specific goods/

22 Gary Shapiro, Patent trolls drain US economy, The Hill (February 24, 2016, 7:29PM), http://thehill.com/opinion/letters/270683-patent-trolls-drain-us-economy.
23 H.R. Rep, supra, note 11 at 23.
24 Steven Seidenberg, supra note 17.
25 Id.
26 Id.

services allegedly infringe upon those claims, and how the accused good/service meets each limitation of each asserted patent claim.[27] However, these required details may be omitted if the patentee cannot obtain the necessary information after reasonable effort.[28] Even though this exemption may appear to provide a loophole for patent trolls, it is possible that this exemption is intended to assist smaller entities which may not have sufficient resources to discover and allege patent infringement.

The Senate and House Committee heard testimony that indicated problems with the patent-enforcement options available, and concluded that further legislation was needed to help protect patent ownership.[29] One aspect this bill intends to modify is the last part of the current patent-enforcement process. It has been established that over the years, the costs of patent litigation have worsened.[30] The overwhelmingly technical nature and complexity of patent infringement lawsuits have allowed settlements to be negotiated merely for economic reasons, as opposed to the merits of the case.[31] As previously mentioned, patent trolls often file frivolous lawsuits in order to profit off of small businesses or start-ups which are unable to afford the cost of a lengthy litigation process.[32] By incentivizing these small businesses and start-ups to settle as opposed to litigate, patent trolls are primarily profiting due to simple economics as opposed to the merits of these claims.

Witness testimony at the Senate and House Committee noted that these settlements are negotiated unjustly, due in part to too many specious claims or defenses filed.[33] These settlements are calculated at costs that are less than it would take to see litigation through to a resolution.[34] This legislation is important to the longevity of the United States patent system; if businesses have no option but to settle for a small percentage less than the actual cost of litigation they will take that option almost every time. Even though abuse of this variety exists elsewhere in litigation, it is the complexity of the subject matter, extensive discovery, and the expert testimony that must be deposed which increases the cost of litigation.[35] United States Patent and Trademark Office Director, Michelle Lee, acknowledged that there is an issue with the current patent-enforcement system.[36] Director Lee further testified that there has been an increasing trend in abusive litigation, such as frivolous lawsuits, that affect small businesses and start-ups which are unable to protect themselves.[37] These lawsuits typically begin with "demand letters" containing vague accusations of patent infringement.[38] This is the behavior the Act intends to eliminate, or at the very least alter. The Act will provide statutory amendments that will increase the transparency of patent

27 Id.
28 Id.
29 H.R. Rep, supra, note 11 at 23.
30 Id.
31 Id.
32 Gary Shapiro, supra note 21.
33 Supra, note 11 at 23.
34 Id.
35 Id. at 23-24.
36 Id. at 26.
37 Id. at 25.
38 H.R. Rep, supra, note 11 at 25.

ownership, by requiring the plaintiffs of a patent infringement lawsuit to be explicit about identification of patent claim allegations and details about the alleged infringing conduct. Doing so, will aid in reducing the amount of abusive litigation, frivolous lawsuits, and create a more unified patent-enforcement system. "Director Lee concluded that 'the USPTO believes that legislation to curtail abusive patent litigation is necessary and appropriate at this time.'"[39] Without a doubt, it is obvious that legislation of this caliber is necessary to protect the rights of owners of a novel patent.

Fee-shifting provision

The Act also contains a provision that attempts to discourage patent trolls by implementing a fee-shifting provision that would allow the prevailing party to receive attorney's fees and other costs.[40] This affects patent trolls in two ways. First, patent trolls do not wish to expend more resources than necessary. Moreover, patent trolls will avoid litigation in fear of being required to pay attorney's fees and other costs to the prevailing party because the lawsuits or demand letters brought by patent trolls contain allegations of patent infringement that have little to no merit. Therefore, this provision acts to discourage patent trolls from filing frivolous lawsuits.

Analogous to this legislation instituting fee-shifting, courts have already provided a means for individuals to receive attorney's fees involved in frivolous lawsuits. In *Octane Fitness v. Icon Health*[41] and *Highmark, Inc. v. Allcare*[42] the Supreme Court relaxed the "objectively baseless" standard that dealt with harassing lawsuits.[43] In doing so, the Court allowed judges to award attorney's fees if the suit was frivolous. This case law discourages patent trolls who do not wish to pay attorney's fees for their frivolous lawsuits. However, these judgments do not articulate what constitutes a frivolous lawsuit; it only allows a judge to award attorney's fees *in their judgment*.[44] However, these rulings by the Supreme Court will not prevent all frivolous lawsuits from being filed, and will not completely suppress paten trolls. Therefore, it is necessary that Congress articulate clear standards for the award of attorney's fees in frivolous lawsuits. This is what the Act intends to do, however, based upon the language it is not clear that it will deter patent trolls.[45]

The Act's fee-shifting provision language, as currently proposed, may not actually deter patent trolls. On the contrary, it may, actually, provide that an award of attorney's fees is mandatory for the *prevailing party*.[46] A patent troll may roll the dice

39 Id. at 25-26.
40 Gene Quinn, Patent Reform 101: A comparison of current fee-shifting language, IPWatchdog (June 11, 2015), http://www.ipwatchdog.com/2015/06/11/patent-reform-101-a-comparison-of-current-fee-shifting-language/id=58638/.
41 Octane Fitness, LLC. v. ICON Health & Fitness, Inc., 134 S.Ct. 1749 (2014).
42 Highmark Inc. v. Allcare Health Mgmt Sys, Inc., 134 S.Ct. 1744 (2014).
43 Robert Stoll, The Patent System: It is important for America that we get it right, IPWatchdog (Feb. 25, 2016), http://www.ipwatchdog.com/2016/02/25/the-patent-system-it-is-important-for-america-that-we-get-it-right/id=66496/.
44 Id.
45 See Quinn, supra note 39.
46 Howard J. Klein, Patent Law Reform - Proceed with Caution, Am. Inventors for Patent Reform (Jan. 5, 2017), http://www.aminn.org/patent-law-reform-%E2%80%93-proceed-caution.

and continue litigation by filing a motion of summary judgment. If troll is successful, the alleged infringing party would be required to pay attorneys' fees and other costs. However, patent trolls may still be deterred from continuing litigation, in fear that litigation expenses may be too costly, and reduce the amount of resources or damages that they might obtain. However, there is an exemption to the award of attorneys' fees: the act mandates "an award of attorneys' fees to the prevailing party *unless* the position of the non-prevailing party was reasonably justified in law or fact. . . ."[47] This language may either benefit parties that have allegedly infringed and deter patent trolls or it may have the reverse effect and damage innocent infringers.

The fee-shifting provision of the Act includes an exemption that would allow a non-prevailing party to avoid liability for paying attorneys' fees and additional costs. This exemption would be costly and burdensome on the innocent infringer. The patent trolls can escape liability for attorneys' fees if they satisfy the language of the exemption by maintaining a position that "was reasonably justified in law or fact."[48] This is troublesome for innocent infringers, for even if a patent troll had a reasonable position in law or fact, this will not deter or prevent the patent troll from filing a frivolous patent infringement lawsuit against a separate patent claim. Therefore, even though patent trolls wish to avoid litigation for fear of increased expenses, patent trolls may still roll the dice with regard to litigation if they are able to fall within the exemption and avoid paying attorneys' fees to the prevailing innocent infringer.

The exemption contained within the fee-shifting provision will affect non-frivolous lawsuits as well.[49] As mentioned previously, the current language of the fee-shifting provision provides that the non-prevailing party pay for the prevailing party's attorneys' fees.[50] Currently, American courts assert that each party is responsible for the legal fees it incurs.[51] However, the language of the fee-shifting provision would change this standard entirely, requiring that the burden of legal fees for both parties be placed on the non-prevailing party in patent litigation. Non-frivolous lawsuits involve small businesses and start-ups. If these entities were faced with an infringement lawsuit, then may be inclined to settle early to avoid losing the suit in court.[52] The threat of liability for the other party's attorney's fees may also deter them from pursuing a suit against a large entity for fear of losing and be required to pay the large company's sizeable attorney's bill.[53] Or more simply, this risk may affect their decision to pursue any legal action because they would not be able to afford their own legal fees.[54]

Even though the Act's fee-shifting provision may deter a small quantity of patent trolls, it does not deter to them all. When this assessment is weighed against the harm

47 Id.
48 See id.
49 Seidenberg, supra note 18.
50 Klein, supra note 45.
51 Seidenberg, supra note 18.
52 , Can the Innovation Act's Fee Shifting Slay the Patent Trolls?, Penn Intell. Prop. Group, (May 11, 2015), http://www.pennip.org/blog/2015/05/11/can-the-innovation-acts-fee-shifting-slay-the-patent-trolls.
53 Id.
54 Id.

that the Act might impose on non-frivolous lawsuits, and small businesses or start-ups, it does not appear that the Act will be welcomed by the intellectual property community. Therefore, if the Act were to be reintroduced to Congress it would require a sizeable overhaul to its provisions

IV. Arguments in favor of the Innovation Act

The Act has some modestly favorable qualities that not only suppress patent trolls, but will support small businesses and start-ups, as well as non-frivolous lawsuits. The provision for heightened standards of pleading affect small businesses and start-ups in a positive way, and allow these entities to be more informed regarding the suit for infringement being brought against them. Further, the fee-shifting provision may provide small businesses and start-ups a means for recovering litigation costs.

Non-practicing entities, otherwise known as patent trolls, do not operate by producing or benefiting commerce in any fashion.[55] Rather, they operate by asserting meritless patent infringement claims against businesses, both start-ups and larger corporations, therefore patent trolls do not want to expend more resources than are necessary in litigation.[56] Because patent trolls are aware of the high cost of patent litigation, they often seek to settle out of court; this ensures that patent trolls reduce their expenses and resources to further line their pockets.[57] Patent trolls often focus their scope upon small businesses and start-ups.[58] These entities are more vulnerable targets, because they typically do not have the resources to fund a defense to alleged claim infringements in court.[59] Moreover, because these small entities do not have the capability of defending themselves in court they are likely to accept settlement offers. Thus, patent trolls preserve their resources while simultaneously growing their bank accounts.

The Act, however, is a good measure to suppress the conduct of patent trolls. Due to stricter pleading requirements, the petitioner must articulate in greater detail the alleged infringement. This requirement, would suppress patent trolls because to articulate in detail the infringement would require them to expend resources to develop a valid argument, resources patent trolls do not wish to expend. Thus, the provision on heightened pleading helps to suppress patent trolls.

This provision further benefits small businesses and start-ups against not only patent trolls, but also all non-frivolous lawsuits as well. Requiring all petitioners to delineate in greater detail the alleged infringement more fully informs all defendants. This is beneficial to patent law, because current standards are too low and only require information that is quite vague.[60] Because complaints currently tend to be quite vague, the burden falls fully on the alleged infringer to investigate and research the infringement.[61] For all businesses, small and large, this is an unnecessary and frivolous

55 Patent Trolls, IPWatchdog, (Apr. 19, 2014), http://www.ipwatchdog.com/patent-trolls/.
56 Elec. Frontier Found., supra note 1; see also Quinn, supra note 39; Patent Trolls, supra note 54
57 IPWatchdog, supra note 54.
58 Id.
59 Id.
60 Seidenberg, supra note 18.
61 Id.

expense of resources and time. Under stricter pleading requirements, petitioners must do their own research and create an argument as to why the defendant infringes, instead of placing that burden on the defendant. This provides uniformity to current patent law, and ensures a more favorable outcome for all parties.

Small businesses, start-ups, and all companies in between will benefit from the Act's increased pleading requirement. It may seem trivial, but the pleading requirements allow the respondent party to be more aware of the claims being brought against them. As mentioned previously, complaints currently tend to be quite vague, and lack explicit reasoning for the alleged infringement.[62] For parties involved in future litigation, the heightened pleading requirements would be beneficial not only in the case of frivolous lawsuits, but as of non-frivolous lawsuits as well.

V. Arguments against the Innovation Act

Controversy has surrounded the Act regarding whether or not the Act would be a beneficial law to supplement the AIA. Issues arising from the controversy include: costs associated with litigating patent infringement suits, patent trolls not being deterred by the heightened standards of pleading, the risk that the heightened standards of pleading may be too encompassing and may absorb lawsuits that are non-frivolous, the risk that every patent infringement case becomes a fee-shifting case, and lastly the chilling effect on research and development of both small and large companies.

The increased pleading requirements were intended to discourage frivolous lawsuits and patent trolls, by requiring more detailed information pertaining to the alleged patent claim infringement.[63] However, the increased pleading requirements will create more lawsuits being filled within the court, increased expenses, and more judicial delays.[64] Which would subsequently lead to small entities being unable to afford the costs of any litigation, frivolous or otherwise. Ultimately, if smaller entities were required to produce these detailed complaints, the burden on them would increase. However, there is an exemption that would allow petitioners to omit the required details if the information cannot be obtained after reasonable effort.[65] However, this exemption does not provide the protection that advocates of the act believe it will provide. Much of the information required in the heightened pleading standards is readily accessible, typically at little expense.[66] This clearly is ineffective at discouraging patent trolls. However, small businesses who have little knowledge of the litigation process, might incur a greater expense in formulating patent claim infringement allegations, therefore creating a greater burden on them.[67] This will lead not only to patent trolls alleging patent claim

62 Id.; See also Glenn Forbis, The Ups and Downs of the Innovation Act of 2015, IPWatchdog, (May 27, 2015), http://www.ipwatchdog.com/2015/05/27/the-ups-and-downs-of-the-innovation-act-of-2015/id=58075/.
63 William R. Woodford, The Innovation Act's Pleading Requirements Will Do More Harm than Good, Fish, (Feb. 10, 2015), http://www.fr.com/fish-litigation/the-innovation-acts-pleading-requirements-will-do-more-harm-than-good/.
64 Woodford, supra note 62.
65 Seidenberg, supra note 18.
66 Woodford, supra note 62.
67 Matt Szymczyk, Innovation Act 2.0 gets it all wrong - will destroy startup IP value, VentureBeat, (February 16, 2016), http://venturebeat.com/2015/02/16/innovation-act-2-0-still-misses-the-point/.

infringement against small businesses and start-ups, but also to these smaller entities being able to enforce their own patent rights as well.[68]

If start-ups and small businesses, which make up one-fifth of the applications at the USPTO and whose patents typically involve breakthrough technologies,[69] and who are generally unable to afford to enforce their own patent rights, then what chance would these entities have against a larger corporation.[70] Smaller entities play a vital role in the field of technology, and patents allow these entities a fighting chance to produce products in commerce.[71] However, if these smaller entities cannot afford to protect their patents due to insufficient time or money, then these entities will no longer continue to produce and invent.[72] Since the act does not address legitimate versus illegitimate infringement litigation, it provides only for heightened pleading requirements.[73] It leaves open ambiguity in the act, which places a larger burden on smaller entities to try to protect their intellectual property, especially against larger corporations.

Larger corporations are generally depicted as having large budgets, and the support of a legal staff that is insurmountable. How could a smaller entity protect their intellectual property against such a force? Chances are that the smaller entity will fold, and succumb to licensing, or some other variation of settlement.[74] If the act were to be promulgated, it would have a greater impact on smaller entities attempting to enforce their own patents, than it would have on suppressing patent trolls, which is the intended goal of the Act.[75] This further establishes that the Act would have a negative impact on non-frivolous infringement lawsuits. If smaller entities are unable to enforce their own patent rights, let alone withstand the legal departments of larger corporations, then this Act does have an impact on non-frivolous lawsuits, and should not be reintroduced to the House floor unless revisions are made.

The fee-shifting provision of the Act would also have a negative impact on smaller entities and non-frivolous lawsuits. As mentioned previously, the current standard is the American rule, that each party pays for its own attorneys' fees.[76] This provision will change that standard entirely for patent law, and bring this field in conflict with the rest of American law.

As the Act's fee-shifting provision currently stands, it will make every case a fee

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68 Id.

69 Robert Stoll, The Patent System: It is important for America that we get it right, IPWatchdog, (February 25, 2016), http://www.ipwatchdog.com/2016/02/25/the-patent-system-it-is-important-for-america-that-we-get-it-right/id=66496/.

70 Szymczyk, supra note 66.

71 Stoll, supra note 68.

72 Szymczyk, supra note 66.

73 Id.

74 Marcy Kaptur, The Innovation Act is Bad News for America's Patent System, IPwatchdog (Apr. 26, 2015), http://www.ipwatchdog.com/2015/04/26/the-innovation-act-is-bad-news-for-americas-patent-system/id=57199/; See also Scott Sandell, Correcting the record of venture capital's views on patent reform, The Hill (Apr. 16, 2015), http://thehill.com/blogs/congress-blog/technology/238941-correcting-the-record-of-venture-capitals-views-on-patent.

75 Id.

76 Seidenberg, supra note 1.

shifting case.[77] This is outcome because the language requires the non-prevailing party to pay the prevailing parties attorneys' fees.[78] Even though the intention of this provision is to assist smaller entities and entities which find themselves subjected to a frivolous lawsuit, this provision does not assist these entities because it does not differentiate between frivolous and non-frivolous lawsuits. To ascertain in a judicial setting if the suit is frivolous would be a monumental task. Thus, the bill should not require a determination as to frivolousness. Instead of creating a presumption that attorney's fees should be awarded, as the bill currently provides, the bill should allow judges to determine if attorney's fees are appropriate given the reasonableness of the petitioner's position.[79] Amended language should not require entities, particularly smaller entities to pay attorneys' fees in the event they lose in court and should prevent non-frivolous infringement lawsuits from being affected.[80]

The Innovation Act is not without its faults and those that oppose this legislation have grounds for doing so. Although the Act intends to protect patent owners from frivolous lawsuits, and increase the likelihood that research-based companies will continue their R&D, there is concern that this bill will have the opposite effect on small businesses, startups and research based companies.

The Judiciary Committee reported that a witness raised concerns about future innovation and technology. "Research based companies are rational decision makers when it comes to deciding whether and how much to invest in R&D."[81] These companies are known for calculating the amount of revenue a project will produce. Expectations concerning revenue directly impacts whether the project is worth pursuing patent protection for. Moreover, factors include whether there is a level of exclusivity, if it will be respected by competitors, or if it can be successfully enforced over patent infringement.[82] When these factors are considered, the company will determine if it is worth investing the time, energy, and money into the project or if the project should be abandoned all together.[83] This information is crucial in determining if this bill will be helpful or destructive to the patent-enforcement system.

If companies determine that research and development is no longer a viable option, because they would be unable to protect themselves against patent infringement lawsuits, then businesses will cease operation. This not only affects the domestic economy, but would have an impact on innovation and technology more broadly. If new ideas are not developed, progress will slow. By today's standards, the world runs on technology. How we communicate with loved ones across the country or world, how business and trade are operated overseas, and how we travel by land, air or sea, is all affected by new technology. New technology stimulates economic growth, job creation, and is vital to the preservation of environment as new technology becomes more

77 Quinn, supra note 39.
78 Id.
79 See id.
80 See id.
81 H.R. Rep, supra note 20, at 25.
82 Id.
83 Id.

efficient. Therefore, it is important that this bill not affect the patent-enforcement system by chilling manufacture and production because companies are unwilling to continue operation because they cannot enforce their patents.

If this bill is reintroduced, there are concerns that it would affect future patent-enforcement procedures, and more likely discourage small businesses and individuals from filing non-frivolous lawsuits. The ground on which the opposition to the bill stands is that the Innovation Act will weaken the patent system in America. Those in opposition argue that the bill would impose burdensome pleading requirements for plaintiffs that exceed what is required [of] other civil cases and demand details [the] plaintiff may not know before conducting discovery.[84] Critics of the bill even point out that the bill would depress filing lawsuits, especially by small businesses and individuals, because these patent holders would not risk having to pay attorney's fees for the opposing party of the lawsuit.[85]

VI. Alternative solutions to the Innovation Act

As with any bill, the Act comes with its faults. Certain comprises must be made in adopting any legislation. However, the current bill is not acceptable. There are other ways to combat the issue of non-practicing entities who file frivolous lawsuits without affecting small entities and non-frivolous infringement lawsuits.

The major purpose behind the Act is to suppress patent trolls and to curb abusive behavior.[86] However, the Act fails to define what constitutes a frivolous lawsuit. An amended version should narrow the scope of the bill to patent trolls and frivolous lawsuits. A definition of who the bill intends to suppress, patent trolls, will avoid affecting smaller entities by not requiring them to pay attorneys' fees if they were the non-prevailing party in a frivolous or non-frivolous infringement suit. Further, it would provide a workable standard for determining when a suit is frivolous. This would avoid impacting non-frivolous suits, however, the hurdle to overcome would be how to define a patent troll to not encompass entities filing meritorious suits. Such a definition would be difficult to construct, even for the savviest legislator. Therefore, it may be in the best interests of the patent system to scrap the Innovation Act, and possibly support a different bill to suppress patent trolls and curb abusive litigation.

There are other bills that have been introduced such as the TROL Act (H.R. 2045), PATENT Act (S.1137), or the STRONG Act (S. 632) in the 116th Congress, that might be reintroduced in the 117th Congress. In order to eliminate abusive litigation, the Innovation Act may be too broad; it may be that smaller acts that chip away at the base of the issue would be more effective.

One aspect of abusive litigation, especially by patent trolls, is the act of submitting demand letters to entities, small or large. The demand letters assert that the allegedly infringing entities must settle or be faced with a lawsuit. The Targeting Rogue and Opaque Letters Act of 2015 (H.R. 2045), hereinafter "TROL Act,"

84 See id.
85 See id at 27.
86 Sandell, supra note 73.

intends to punish those that send demand letters in bad faith.[87] The TROL Act's intent is to authorize the Federal Trade Commission, hereinafter "FTC," to enforce the bill against written communications, presented in bad faith, to recipients for liability or owing compensation for infringing an asserted patent.[88] These demand letters will be recognized as an unfair or deceptive act, or practice in violation of section five of the Federal Trade Commission Act.[89] The FTC is permitted to enforce the powers of the bill by its civil penalty powers against entities that submit demand letters. Further, if the FTC is unable to adequately pursue all the alleged abusive behavior, the bill would allow state attorney generals to enforce the bill.[90] Lastly, under section four of the bill, the TROL Act would preempt state or local laws with regards to the transmission of demand letters.[91] The TROL Act has a different scope than that of the Innovation Act. The TROL Act intends to confront abusive tactics made by patent trolls before they reach the courts. Further, this bill is beneficial because it addresses what constitutes abusive communication and provides a more transparent approach to curb this behavior, as opposed to affecting non-frivolous litigation. Furthermore, for smaller entities, this bill provides the protection of a federal agency to enforce the legislation against abusive tactics without affecting non-frivolous lawsuits. This bill would be a satisfactory start to curbing abusive communication and litigation, and based on the support of numerous associations and organizations, this bill would be a better fit than the Innovation Act, and should be reintroduced to the 117th Congress.[92]

There were other bills that were introduced in the 116th Congress that are worth mentioning. Specifically, the Protecting American Talent and Entrepreneurship Act of 2015 (S. 1137), hereinafter "Patent Act," much like the Innovation Act, however, similar to the TROL Act it intended to empower the FTC to enforce civil penalties against those issuing demand letters that falsely represent that the recipients infringe upon patent claims.[93]

The Patent Act is not as broad as the Innovation Act, however, this may be the correct formula for patent reform to combat patent trolls, taking smaller steps towards reducing abusive and frivolous patent infringement litigation. One of the major differences between the Patent Act and the Innovation act is the language of the Patent Act's fee-shifting provision.[94] A lot of controversy that surrounded the Innovation Act

87 Patent Progress, Patent Progress's Guide to Federal Patent Reform Legislation (Jan. 6, 2017), http://www.patentprogress.org/patent-progress-legislation-guides/patent-progresss-guide-patent-reform-legislation/.

88 H.R. Res. 2045, 114th Cong. (2015).

89 Supra note 87; see also Jason Zucchi, An Overview of the TROL Act Recently Introduced in the House, Fish & Richardson (Apr. 17, 2015), http://www.fr.com/fish-litigation/trol-act-introduced-in-the-house/.

90 Jason Zucchi, An Overview of the TROL Act Recently Introduced in the House, Fish & Richardson, Apr. 17, 2015, http://www.fr.com/fish-litigation/trol-act-introduced-in-the-house/.

91 Supra note 87; see also Jason Zucchi, supra note 89.

92 Lisa Jorgenson, The Targeting Rogue and Opaque Letters (TROL) Act, American Intellectual Property Law Association (2015), http://www.aipla.org/advocacy/congress/Documents/AIPLA%20Letter%20concerning%20TROL%20Act%204-27-2015.pdf; see also Brian Pomper, Innovation Alliance Letter to House Energy & Commerce Committee Leadership Supporting the Targeting Rogue and Opaque Letters (TROL) Act, Innovation Alliance (Apr. 29, 2015), http://innovationalliance.net/from-the-alliance/innovation-alliance-letter-house-energy-commerce-committee-leadership-supporting-targeting-rogue-opaque-letters-trol-act/.

93 S. Res.1137, 114th Cong. (2015).

94 See Quinn, supra note 39.

was its fee-shifting provision, and the argument that it made every case a "fee-shifting case"[95] This provision sets forth the same standard as the Innovation Act: a court may shift fees if it's found that the non-prevailing party's position or conduct was not objectively reasonable.[96] However, the Patent Act is more effective than the Innovation Act because it shifts the burden of proof from the losing party, to the prevailing party.[97] This is a more adequate solution in deterring patent trolls from filing frivolous litigation against alleged infringers, because, a judge may shift attorneys' fees and other costs only if the prevailing party can prove that the losing party's position was unreasonable.[98] This allows alleged infringers an opportunity to show that the patent trolls, litigation was unreasonable and thereby recover attorneys' fees. Moreover, this also prevents patent trolls from being awarded attorneys' fees in the event that their litigation is successful. This is the case because the losing party, the alleged infringers, cannot be forced to pay attorney's fees because their position cannot be unreasonable as defendants. Further, this provision prevents non-frivolous litigation from being affected, as well. Non-frivolous lawsuits have some meritorious claim against alleged infringers, and to not seek to extract damages and licenses as do patent trolls. Similar to the TROL Act, the Patent Act intends to provide the FTC authority to stifle entities that send demand letters that falsely represent the recipients' liability for patent infringement.

Regulation of abusive demand letters has been recommended by many organizations across the country, and many are in favor of confronting this abusive tactic, such as the American Intellectual Property Law Association, hereinafter "AIPLA." The Patent Act, like the TROL Act, authorizes the FTC to restrain entities that send demand letters in bad faith. The AIPLA "conditionally supports" this provision of the Patent Act, because the AIPLA recognizes that demand letters have become more than an inconvenience to smaller and even large entities. However, the AIPLA believes that this provision should include a definition of bad faith, such as the malice standard set forth in *New York Times v. Sullivan*[99], so that First Amendment rights are not affected by this bill.[100] The Patent Act not only provides substantial protection to small entities and start-ups, but prevents non-frivolous lawsuits, and is therefore a sufficient solution to the problem of patent trolls and frivolous lawsuits.

Conclusion

In conclusion, the Innovation Act's drawbacks far outweigh the benefits or protection the law intends to provide for patent holders. The Innovation Act does not adequately serve the function of combating patent trolls to ensure that smaller entities and

95 See id.

96 Adi Kamdar, The PATENT Act: The Senate's Solid Start to Reforming the Patent System, Electronic Frontier Foundation (May 5, 2015), https://www.eff.org/deeplinks/2015/05/patent-act-senates-solid-start-reform-patent-system.

97 See Quinn, supra note 39; see also Kamdar, supra note 95.

98 Supra note 95.

99 New York Times Co. v. Sullivan, 376 U.S. 254 (1964).

100 Summary of S. 1137, the PATENT ACT and AIPLA Positions as of June 2, 2015, pg 2, American Intellectual Property Law Association (2015), http://www.aipla.org/advocacy/congress/114C/Documents/AIPLA%20Summary%20and%20Position%20Chart%20-%20S1137%20PATENT%20Act%206-2-2015.pdf.

start-ups are not harassed by abusive litigation in an effort to extract money from the smaller entities. Further, the Innovation Act does not deter patent trolls sufficiently by inducing the fear of having to pay attorney's fees to the alleged infringers, while there is a greater chance that the fee-shifting provision will affect alleged infringers and non-frivolous lawsuits. Moreover, other bills have been introduced such as the TROL Act and the Patent Act, that are better equipped and better focused to address the issue of abusive litigation and patent trolls. Therefore, the Innovation Act should not be reintroduced to future Congresses, and the reintroduction of the TROL Act and the Patent Act would be a better fit for patent reform.

Sorting the Beef from the Bull: The Science of Food Fraud Forensics

Reviewed By: Samantha Cirillo

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Relevant Legal and Academic Areas: Criminal Law, Food Adulteration, Economics, Health, and Food and Drug Administration.

Summary: *Sorting the Beef from the Bull* is a book about how science has been used to uncover food adulteration and prosecute criminals all over the world. The book highlights previous scams and their impact on the global economy and human health. A comprehensive explanation is provided to discuss the current gaps in American law that make the food industry an easy target for fraudsters. The authors stress that the driving forces behind food fraud are the low probability of prosecution and the opportunity for a significant profit.

About the Authors: Richard Evershed is a Professor of Biogeochemistry at the University of Bristol. He has been a pioneer for ensuring the quality and authenticity in today's food. He has also worked to develop a method for detecting adulteration in vegetable oil. Nicola Temple is a biologist and science writer.

I. Introduction

In the book *Sorting the Beef from the Bull*, Authors Richard Evershed and Nicola Temple set out to address the issue of food fraud in the global market. The United States defines food fraud as "the deliberate and intentional substitution, addition, tampering, or misrepresentation of food, food ingredients, or food packaging; or false or misleading statements made about a product, for economic gain". Food fraud is a very complex topic due to the number of issues that are encompassed within the broader category of "food fraud", including political, legal, social, environmental, financial, and criminal issues. Due to the topic's complexity, the book discusses previous food fraud cases to bring awareness to the loopholes and gray areas within food production's legal framework. Evershed and Temple discuss the need to increase the risk and penalties in order to outweigh the potential awards associated with fraud. Although it is unjustifiable, most food adulteration is not motivated by criminal or ill intention, but rather economic

gain. Fraudsters are able to make easy money while consumers are left to pay the price. Ultimately, fraudsters are able to profit by adulterating the quality of the product by substituting or adding something cheaper.

Strengthening regulations and detection techniques will not be any easy task. Food fraud is a cat and mouse game with intelligent scientists on both sides. Estimates indicated that one in every ten items we buy at the grocery store is fraudulent in some way. Evershed and Temple state that consumer knowledge is a powerful tool necessary to combat food fraud.

II. History of Government Action Against Food Fraud

Food adulteration is not a new issue. In fact, fraudsters have been using the food industry to make a profit dating back to Ancient Rome. In Rome, lead was added to soured wine in order to mask the foul taste, and it was later believed to be a reason behind why many wealthy Romans were sterile and mentally incompetent. Food fraud has also been a large part of the American market as well. In 1872, a New York Times article stated "most people have come to accept it [food adulteration] nowadays as practically inevitable". The New York Times article continued by stating it may be for the best that people don't actually know "what abominable messes they are constantly putting down their throats under the most innocent disguises".

The first food laws in the United States were passed as a result of journalists and scientists exposing the conditions of food production that led to the risk of fraud. Harvey Washington Wiley was a chemist in the Department of Chemistry within the United States Department of Agriculture (USDA). Wiley's work with a volunteer food detection group called the "Poison Squad" led to the creation of the Pure Food and Drug Act passed in 1906. The Department of Chemistry later became the Food and Drug Administration (FDA) and was given the responsibility to administer the Pure Food and Drug Act. Upton Sinclair's 1906 novel, *The Jungle*, was a driving force behind the creation of the Federal Meat Inspection Act. *The Jungle* was intended to expose the exploitation of illegal immigrants but instead exposed the horrible conditions of meat processing facilities. Among other things, Sinclair witnessed rats, mold, and rat droppings being added into the sausage meat. The Federal Meat Inspection Act was set to ensure the sanitary processing of meats and raised the sanitary expectations and regulations in slaughterhouses and processing plants.

III. United States Action

Food regulation is the United States is largely a reactive process. The government needed an extremely public scandal like the 2012 horse meat scandal in the United Kingdom, before food regulation became a priority. Before "Horsegate", the United States did not conduct DNA testing on minced beef.

After the events of 9/11 exposed major vulnerable points in homeland security, the government identified food as an additional vulnerability. Americans consume food every day and the globalization of the food industry creates long and international supply chains. Instead of waiting for the next attack on the food industry, the United

States government wanted to find ways to be one step ahead of the next scandal. In 2004, the National Center for Food Production and Defense (NCFPD) was created. The NCFPD was constructed of researchers who were tasked with improving methods for detecting food adulteration, and further identifying the vulnerable areas of the food industry as a whole.

The NCFPD has developed a food fraud forecast program that looks at triggers, such as climate change, to predict the types of foods that may be more prone to adulteration during a set period of time. Amy Kircher, a director of NCFPD, describes the forecast system as narrowing down the section of the haystack in order to find the needle. The group identifies food products that have a history of adulteration and factors that may incentivize or attract fraudsters. For example, when the media began to advertise the health benefits associated with pomegranates there was a drastic increase in pomegranate products, however the production of pomegranates never increased. The disparity between the increased products while maintaining similar production rates raised a red flag for the NCFPD.

Eversheld and Temple recognize that the proactive strategy may help but, it will never be able to eliminate food fraud completely. The science used by fraudsters is constantly changing and improving. This creates an arms race between criminals and the government, while each are trying to out-smart each other.

Another government action was the creation of the food fraud database by the United States Pharmacopeial Convention (USP). The database shows previous food adulteration cases and how the food was adulterated. The database allowed the government to identify which foods were the most vulnerable to fraud. The most common being Olive Oil. Other common adulterated foods include: spices, meat, seafood, and beverages like milk, wine, and juice.

III. Vulnerable Foods

The complex category of food fraud encompasses crimes anywhere from the harmless mislabeling of wine to the deadly health effects resulting from melamine added into milk. Scandals can range from the financially insignificant act of adding water to milk, to a complete market crash associated with the 1960's Salad Oil Scandal. Besides the deceitful sales in the wine market, most food fraud is particularly concerning because low income families are the likely targets.

Eversheld and Temple provide a comprehensive case study of several vulnerable food categories and how governments have responded, if it all.

A. *Milk*

One of the greatest consequences of food fraud is the threat to human health. In 2004, China came face to face with counterfeit baby formula that affected more than 200 babies. The fraudulent baby formula removed the nutritional supplements and replaced them with starch and sugar. When an infant is faced with this level of nutritional deficit, the body directs the limited resources to the brain instead of other

body parts, which contributed to "big head disease." The Chinese government identified twenty-two people that were connected to the counterfeit formula and prosecuted them for fraud. The scandal also drove the Chinese Government to create the China Food and Drug Administration (CFDA) modeled after the United States FDA.

Another scandal in China in 2008 impacted human health as well as the global milk market. Fraudsters supplemented milk with Melamine, which is an industrial chemical used to create plastic coating on products such as kitchenware and adhesives. The Melamine caused 300,000 children to fall ill, 52,000 were hospitalized, and six children died. In addition to the serious health effects, China's largest dairy producer went bankrupt as a result of the scandal. Additionally, more than sixty countries were forced to recall Chinese dairy products, costing the market a total of $18 billion.

The United States also faced a significant milk scandal during the 1850s. The scandal, however, showed the lack of resources used to investigate and prosecute fraudsters. In response to a high demand for milk in the New York City area, distillery dairies popped up in Brooklyn and Manhattan. Cows were tied up in disease infested conditions and fed alcoholic mush, called "swill," left over from the neighboring distilleries. The cows produced a bluish milk, which consisted of a combination of milk, pus, and dirty water. The fraudsters then added eggs, flour, water, and sugar to mask the odor and taste and later shipped the milk out and sold it as "pure country milk." There were allegations of a causal connection between swill milk and the high levels of infant mortality in the New York City area. However, no one was prosecuted and the connection was never proven.

The milk scandals that the global market has endured show the serious consequences of food adulteration. It is very easy to detect the health effects of food fraud when a large group of people fall ill in a short period of time. With limited resources, however, it is very hard to determine the long-term health consequences that may result from various food fraud. Evershed and Temple used these cases to show the extreme effects of food fraud and why it needs to be a governmental priority. Although regulations have improved since the New York City swill milk scandal, the crimes committed show a need for a greater allocation of resources to protect consumers and prosecute these potentially dangerous crimes.

B. *Wine*

Milk scandals targeted low income families that were forced into buying the cheaper formula to cut costs, and, as a result, children suffered serious health consequences. On the complete opposite end of the spectrum, however, the wine industry is full of wealthy consumers with ample resources to investigate and prosecute potential fraud. A string of fraudulent cases stemmed from the well-known "Jefferson Bottles" scandal. In 1985, Hardy Rodenstock claimed that he uncovered wine bottles from Thomas Jefferson's personal collection while visiting Paris. The bottles were all engraved with "Th. J." and were consistent with the time period when Jefferson vacationed in Paris. A German collector, Hans-Peter Frericks, bought a Jefferson bottle directly from Rodenstock, but later become suspicious of its authenticity. He tested the bottles by looking at

the radioactive isotope, ^{14}C, to help date the creation of the wine. When grapes are harvested, the ^{14}C they have collected begins to decay. There is a standard level of decay that can be used to determine the age of the wine. The test indicated the levels of ^{14}C found in the Jefferson bottle were far too high to be a 200 year old bottle. The test showed that the bottle was from the 1960s. As a result of the scientific evidence, Frericks was successful in a suit against Rodenstock for selling adulterated wine. Rodenstock later sued Frericks for defamation and the two men settled out of court.

A United States businessman, Bill Koch, also purchased four Jefferson bottles, for a total of $500,000. In 2005, Koch had a net worth of over $4 billion , and with virtually unlimited resources at his disposal, Koch set out to target wine swindlers. Koch first targeted Rodenstock and won a default judgment for $600,000 in damages after bringing in an expert to show Thomas Jefferson used a colon between his initials. Koch also sued Eric Greenberg after selling him $300,000 worth of counterfeit wine. Koch was awarded $12.4 million in damages and an additional $12 million in punitive damages. The federal judge later reduced the damages to a total of $1.7 million, ruling that Koch was overcompensated because this type of fraud was harmless and only impacted the wealthy.

Lastly, Koch targeted Rudy Kurniawan after it was discovered Kurniawan's rare vintage wine was actually made in his kitchen. After a FBI investigation, Kurniawan was arrested and sentenced to 10 years in prison and $48 million in damages. A total of $28.4 million was given to Kurniawan's fraud victims including $3 million to Koch.

Wine fraud is a profitable business for fraudsters. Kurniawan's income from the sale of his kitchen masterpieces was found to be somewhere between $20 million and $75 million. Evershed and Temple stress that there was absolutely no health risk associated with this fraud and when compared to poisoning babies with fraudulent milk, this is simply a case of deceiving the wealthy. The wine scandals show the disparity between the resources allocated to investigating and prosecuting different food fraud. Ample resources have been used to prosecute wine fraudsters and resources are scarce when the fraud is impacting the poor and vulnerable. Sadly, people with limited resources are more commonly the target of food fraud scandals because processed and cheaper foods are more vulnerable to adulteration.

C. *Vegetable Oil*

Food fraud can also have a significant impact on the economy. In 2009 the United States FDA began to target and later defined Economically Motivated Adulteration (EMA) as "the fraudulent, intentional, substitution, or addition of substance in a product for the purpose of increasing the apparent value of the product or reducing the cost of its production, i.e. for economic gain". Studies have estimated that food fraud and adulteration can cost the global food industry anywhere from $10 billion to $49 billion in any given year. Once the fraud is detected there are significant costs associated with testing and removing the adulterated food from the market. One of the most common targets for adulteration for economic gain is found in vegetable oil. Due to the high demand in the global market, fraudsters are able to mix cheaper oils in

with more expensive oils and sell for lower prices. The process of secretly substituting various oils can be dangerous for consumers, especially if it contains an unlabeled nut oil. Unfortunately, once a company decides to cut corners, competitors must decide whether to adulterate their product as well or risk losing business due to the inability to compete with the fraudulent lower prices.

a. *1963 Case Study: Salad Oil Scandal*

A clear example of the possible impact associated with food fraud in the global market is shown through the soybean oil scandal in 1963. Tino De Angelis received large loans from various banks and Wall Street corporations based on a given amount of soybean oil he was set to import into the United States. However, in an effort to make money, De Angelis loaded the shipments with water and floated only a few feet of soybean oil on the surface of the barrels. Based on his knowledge that only the top of the barrels was inspected, the shipment was certified as one hundred percent soybean oil. Once the scandal was exposed, the values of the loans were wiped off the market in minutes causing the market to crash. The scandal resulted in over $150 million in losses for corporations such as American Express, Bank of America, and Bank Leumi. As a result, De Angelis was later sentenced to seven years in jail.

D. *Juice*

Due to the media advertising the healthy level of antioxidants and vitamins contained in certain juices, the juice market is continuously growing and currently worth an estimated $33 billion per year. This increase in sales has attracted various fraudsters into the juice market as well. For example, a new target was created due to the recent buzz surrounding the health benefits of pomegranate juice. In 2007, POM Wonderful sued Purely Juice Inc. for false advertisement. Purely Juice advertised their juice as 100% pomegranate juice. Suspicious of the extremely low price of Purely Juice's product, POM Wonderful conducted independent testing and found little to no pomegranate juice. Purely Juice's President, Paul Hachigian was later held personally liable for $2 million in damages and as a result the company was forced out of business.

In response to the threats associated with the high level of mislabeled foods, the United States has enacted various labelling laws that require the use of certain terminology on juices. These terms are commonly seen on the side of juice containers and are heavily regulated. The labels range from "100% Fruit Juice" meaning the drink does not contain any juice from concentrate, to "Juice Drinks" which only contain roughly 10-20% fruit juice. However, currently in the United States, nano-sized ingredients in food do not need to be labelled. Evershed and Temple state that the only way to avoid mislabeled juices is to simply eat a piece of fruit instead.

E. *Seafood*

The United States imports roughly 91% of the nation's seafood. Due to the ineffective and sporadic testing of seafood imports, Evershed and Temple have identified seafood as an extremely probable target for food fraud, especially mislabeling and substituting. For example, in a study conducted from 2010-2012, a United States

organization, Oceana, collected 1,200 seafood samples across twenty-one different states and found that 33% of the samples were mislabeled.

Seafood is particularly vulnerable to fraud due to the long and international supply chains coupled with consumers' demand for processed and ready to eat food. Even seafood caught in the United States is typically shipped overseas to cut costs on processing and then later returned adding several different stops and potential opportunities for fraud. For example, 230 million pounds of squid are caught in California every year and the squid travels nearly 12,000 miles to China and back, to save on processing costs.

Another concern associated with seafood fraud is the potentially dangerous and lasting impact on the environment. Substitutions and mislabeling in the seafood industry fosters illegal, unreported and unregulated fishing (IUU). IUU fishing has been estimated to be worth nearly $11.4 to $22.8 billion per year. IUU fishing has been increasing in recent years and may make up as much as 50-75% of all fishing. This seafood black market cuts against ongoing conservation efforts and makes it difficult for consumers to make sustainable choices.

The current regulations fall short of catching a majority of the seafood fraud. The FDA only inspects 1-2% of all seafood imports. An agent of the United States National Oceanic and Atmospheric Administration (NOAA), Scott Doyle, stated "If I was going to be a criminal, I would be in the fish and wildlife smuggling business. Nobody has any idea what's going on. They just buy fish". Although mislabeling of seafood is not a new challenge, the United States has just recently set out to increase inspections and testing in order to assure the quality of the seafood consumed throughout the country.

In 2014, the Obama administration "established a national taskforce to combat seafood fraud and IUU fishing." The taskforce was designed to seek better systems for gathering and analyzing seafood and imports and to further develop a seafood traceability program. Another attempt to enforce seafood safety was taken by Senator David Vitter who introduced the Imported Seafood Safety Standards Act. The Act is intended to create more inspections and testing, as well as increase penalties for mislabeling.

Another interesting development to help track and identify seafood type and origin has come from the technology arena. Researchers at the University of South Florida have developed a "hand-held device called grouper-checker." The product costs around $2,000 and uses DNA based methods to test if the fish is actually grouper. Although this product is a step in the right direction, it is insignificant in the grand scheme of food fraud. The hand-held product is costly and only checks for one result.

F. *Meat*

a. *2012 Case Study: Hitchin' Post Steak Co.*

In 2012, a poultry slaughtering and processing company named, Hitchin' Post Steak Co. was charged with selling misbranded and adulterated meats. The company

was charged with crimes that had a maximum penalty of up to 16 years in prison and $1.2 million in fines. The charges included conspiracy to transport and sell misbranded poultry, unauthorized use of an official mark of inspection, and selling or processing poultry products that were misrepresented as inspected. However, management entered into plea deals and the Vice President was only sentenced to one-year probation and a $5,000 fine. Similarly, the General Manager was sentenced to one-year probation and $15,453 in fines and restitution.

IV. Cost-Benefit Analysis

A. *Increase the Risk*

One of the greatest faults in the United States enforcement of food fraud is the large discrepancy between the maximum sentences for food crimes and the actual sentences imposed. Cases like the Hitchin' Post Steak Co. show that the sentences are not acting as a deterrent for future fraudsters. In order to act as a proper deterrent, Evershed and Temple state that penalties must be severe enough to counter the high financial benefits involved. The government needs to act as a leader and oversee an increase in the probability and severity of fraud punishments.

Professor Chris Elliot, relates the punishment of food fraud to crime in the community by make the analogy to the criminal theory of broken windows. Elliot explained that if a building has a number of broken windows, then criminals with likely break more. This theory shows that the government must have a zero tolerance approach towards food fraud and punish even the smallest fraudulent acts in order to deter future food fraudsters.

Ultimately, the government can reduce the amount of food fraud by increasing the risk of getting caught. Most economic crimes require criminals to make a calculated decision to engage in crimes that will provide the highest reward with the lowest probability of getting caught and punished. Admittedly, the United States is in an extremely difficult situation. Increasing testing and inspections come with additional and extensive costs. However, due to the shift towards more and more processed foods, the government should play a bigger role in setting and enforcing food quality standards. The more processed the food is, the easier it is to hide or mask the adulteration.

B. *Increase the Required Effort*

In addition to the low risk, fraudsters are attracted to the food industry simply because it is easy. With the long and sometimes international supply chains, there are endless points in the chain that fraudsters can use to make a profit at the expense of the consumer. Today the supply chain continues to grow and has now developed into a supply network. For example, a cup of hot chocolate has approximately thirty-one different points in its supply network for the sugar, milk, and cocoa.

There needs to be a demand for industries to reduce their supply chain. Evershed and Temple also urge consumers to buy locally and conduct research on various businesses that have smaller supply networks. Surprisingly, McDonalds in the United

Kingdom is one of the best for actively reducing their supply network. For example a McDonalds burger only has three stops: the farm, the slaughterhouse and the processor.

To help urge consumers to buy locally, the United States government has created a tariff system to help give local producers a competitive edge over imported goods. However, the tariffs may be a trigger for food fraud as well. For example, when the United States discovered that their catfish market was suffering due to the amount of imported catfish, the United States raised the catfish tariff from 5% to 64%. This was later known as the "catfish wars". The idea behind the tariff was to reduce the amount of imported catfish, but instead distributors began to label the catfish as grouper to get around the tariff. As a result, one import company avoided over $63 million in tariffs by mislabeling their product. Another company admitted to importing over 11 million pounds of catfish as grouper. When the news broke, many consumers stopped buying grouper, which ultimately caused the United States' grouper sales to drop significantly.

Although the purpose of tariffs was well intended, they have been largely ineffective. Due to the lack of inspections and testing, there are numerous cases of producers simply mislabeling their product to avoid the tariff. Although unintended, tariffs may be creating greater incentives for food fraud.

C. *Consumer Demand for Food Integrity*

Another variable that allows food adulteration in the United States market is consumer demand for convenience, enjoyment and affordable products. In 2007 the United States imported over $60 billion worth of ready to eat, overly processed foods which is a 100% increase since 1998. Unfortunately, consumers have placed the value of money over the integrity and quality of the food they consume. In order for a change to occur, Evershed and Temple state that consumers need to demand food integrity by refusing to buy fraudulent products. Consumers have created unrealistic expectations in regards to what quality food should cost and how it should look, smell, and taste. Consumers have simply accepted the fact that their food contains preservatives that allows it to last for abnormal amounts of time in order to achieve convenience. For example, fresh bread should not last more than a few days, but instead lasts weeks on the shelf. Although preservatives are not a form of food fraud, they show that consumers are out of touch with the reality of food products. Consumers have also become oblivious to how much food should actually cost. Many consumers are unaware of what produce should be in season because supermarkets now have everything available all year long.

A study showed that in the 1900s families in the United States spent about 43% of income on food and in 2013 families only spend 13%. Families are always looking to cut costs and somewhere along the way Americans traded the quality of their food in exchange for saving money.

Professor Lisa Jack stated that even though the community has a local police station, citizens still lock the doors to their own home. This analogy serves as a call for consumers to avoid solely relying on the government to regulate food quality and to take matters into their own hands. Consumers should be aware of food fraud and take the necessary

steps to reduce the likelihood of falling victim to the fraud. Evershed and Temple point out that consumer knowledge of possible areas of fraud is a powerful tool against food adulteration.

V. Author Tips for Detection & Reducing Food Fraud

Science and technology have become an integral part of reducing food fraud. The food traceability market is continuing to grow and in 2015 the market for traceability technology was worth nearly $11 million. One Degree Organic Foods located in Canada created an App to allow consumers to scan any QR code and to trace the product's supply chain. In 2011 the FDA also released its own barcode databases to help improve traceability.

Although science and technology have been helpful in fraud detection, Evershed and Temple state that consumers can be their own human detectors. The authors urge consumers to expand their internal food reference database by exploring different foods and experimenting with them. By trying new foods, consumers can have a basis of what good food tastes, smells, and looks like. Consumers should ultimately pick whole recognizable foods. Consumers should buy from local farmer's markets to cut down the supply chain. Lastly, Consumers should also be realistic about the cost of their food, and remember that "prices too good to be true probably are".

VI. Conclusion

In conclusion, Evershed and Temple do an excellent comprehensive and complete overview of the faults and failures located in the United States food industry while proposing insightful and realistic changes that the government and consumers can make to combat food fraud and demand the integrity and quality of our food.

Application of the Halo Standard in U.S. District Courts

Nicholas Dellefave

Abstract

On June 13, 2016, the Supreme Court issued a decision in *Halo Electronics Inc. v. Pulse Electronics Inc.*, in which it abrogated the *Seagate* standard for awarding enhanced damages for willful patent infringement. In the months since *Halo* was decided, hundreds of patent infringement lawsuits have been filed in federal district court. This note will examine the application of the new standard at the trial level and the potential implications of inconsistent application.

Introduction

The Supreme Court decided *Halo Electronics Inc. v. Pulse Electronics Inc.* on June 13, 2016, abrogating and replacing the standard articulated in *In re Seagate Technology, LLC* governing enhanced damage awards in patent cases. The decision marked a shift in modern patent law, as plaintiffs seeking to recover enhanced damages from patent infringers - typically on the grounds of willfulness or egregiousness - would appear to have an easier time doing so under the new *Halo* framework. However, *Halo* granted district courts broader discretion in making this determination than they had been afforded under *Seagate*. With any broad grant of discretion comes uncertainty about exactly how the rule will be applied in practice. This note first examines the historical background which set the stage for *Halo* to be decided. It then examines a variety of cases decided under *Halo* and attempts to identify the logic and reasoning most commonly employed by courts in applying the new rule. Finally, it discusses potential ramifications of the new rule with an eye toward the future.

Background

A successful plaintiff in a patent infringement action is entitled to "damages adequate to compensate for the infringement, but in no event less than a reasonable royalty" for the defendant's use of the invention.[1] However, enhanced damages may be permitted, up to three times the amount proven, in cases of willful infringement.[2]

Patent infringement is a strict liability tort.[3] While this would typically mean the defendant's level of culpability is immaterial, the nature of its actions may be relevant to the determination of whether the infringement was willful.[4] Willful infringement is not explicitly defined by statute, although courts have historically equated willful infringement with conduct constituting bad faith.[5]

1 35 U.S.C. § 284 (2011).
2 Id.
3 In re Seagate Tech., LLC, 497 F.3d 1360, 1368 (Fed. Cir. 2007).
4 Id.
5 Jurgens v. CBK, Ltd., 80 F.3d 1566, 1570 (Fed. Cir. 1996).

Of particular note for patent litigators is the standard for willfulness applied in the U.S. Court of Appeals for the Federal Circuit ("Federal Circuit"). When the Federal Circuit was created in 1982, it was given sole appellate-level jurisdiction over patent case appeals.[6] One of Congress' purposes in doing so was to "promote greater uniformity" in the area of patent law.[7] Prior to the formation of the Federal Circuit, the judicial system's failure to enforce patent rights was seen as a disincentive to scientists to continue to innovate, as infringers were allowed to take the fruits of the inventors' labor without any adverse consequences.[8] Furthermore, some regional circuit courts of appeal had reputations for regularly finding patents invalid, rendering patent enforcement a futile exercise in some areas of the country.[9] Shortly after the Federal Circuit was created, it began to create standards to combat patent infringement, including the standard for awarding enhanced damages.[10]

The first of these standards was the "affirmative duty of care" articulated in *Underwater Devices, Inc. v. Morrison-Knudsen Co., Inc.*, in which the court held that where a potential infringer had actual notice of another's patent rights, he had an affirmative duty to exercise due care to determine whether or not he was infringing.[11] This included "the duty to seek and obtain competent legal advice from counsel before the initiation of any possible infringing activity."[12] This resulted in the rise of the "advice of counsel defense" to a charge of willful infringement. "Under this defense, an accused willful infringer aims to establish that due to reasonable reliance on advice from counsel, its continued accused activities were done in good faith."[13] In *Underwater Devices*, a competitor of the patentee had been advised that it should not be overly concerned about its competitor's patent rights because "courts, in recent years, have — in patent infringement cases — found [asserted patents] invalid in approximately 80% of the cases."[14] Following *Underwater* Devices, the Federal Circuit imposed an "adverse inference" on defendants who failed to demonstrate that they had obtained an opinion of counsel in defense to a willfulness charge: "[A defendant's] silence on the subject, in alleged reliance on the attorney-client privilege, would warrant the conclusion that it either obtained no advice of counsel or did so and was advised that its [activities] would be an infringement of valid U.S. patents."[15] The adverse inference was later disallowed in *Knorr-Bremse Systeme Fuer Nutzfahreuge GmbH v. Dana Corp.*[16] and was statutorily

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6 History of the Federal Judiciary, Fed. Judicial Ctr., http://www.fjc.gov/history/home.nsf/page/landmark_22.html (last visited Apr. 27, 2018).

7 Id.

8 Id.

9 Andrew N. Stein & Charles H. Sanders, A Sea Change in The Federal Circuit's Perspective, Law360 (Aug. 29, 2007),

http://www.law360.com/articles/33658/a-sea-change-in-the-federal-circuit-s-perspective.

10 Underwater Devices, Inc. v. Morrison-Knudsen Co., 717 F.2d 1380 (Fed. Cir. 1983).

11 Id.

12 Id.

13 In re Seagate Tech., LLC, 497 F.3d 1360, 1369 (Fed. Cir. 2007).

14 See Underwater Devices, Inc., 717 F.2d 1380, 1385 (Fed. Cir. 1983).

15 Kloster Speedsteel AB v. Crucible Inc., 793 F.2d 1565 (Fed. Cir. 1986).

16 Knorr-Bremse Systeme Fuer Nutzfahreuge GmbH v. Dana Corp., 383 F.3d 1337, 1344 (Fed. Cir. 2004) (holding that to allow an adverse interest to flow from privileged attorney-client communication risked distorting the attorney-client relationship).

prohibited by the 2012 America Invents Act.[17]

The *Underwater Devices* duty of care and the accompanying adverse interest opened the door to "opportunities for abusive gamesmanship" by patent holders.[18] Patentees would send copies of their patent to large numbers of potential defendants and demand that the companies agree to license the patent without providing any further information. The patentees were then able to allege willful infringement based on the defendants' acquired "knowledge" of the patentee's rights, satisfying the notice requirement.[19] In 2003, the Federal Trade Commission reported that the duty of care standard had caused many companies to be apprehensive about investigating the patents existing in their industries for fear of later being charged with willful infringement.[20] As a result, the FTC concluded that this fear stifled innovation, which ran counter to the goals of patent law.[21]

While the affirmative duty set forth in *Underwater Devices* had been deemed necessary to enforce patent rights, which the court felt were not being respected prior to the creation of the Federal Circuit, the FTC report signaled a shift. Patent rights had become too strong, some scholars argued, particularly in light of the prevalence of non-practicing entities - or "patent trolls." As a result, in 2007, the Federal Circuit abandoned the longstanding affirmative duty of care and set forth a new test for willfulness.[22]

Since 2007, the governing standard for determining whether patent infringement was willful had been the *Seagate* test, as articulated in *In re Seagate Technology, LLC*.[23] The two-part test involved evaluating first whether the infringer acted despite an objectively high likelihood that its actions constituted infringement of a valid patent, and then whether the risk of infringement was either known or so obvious that it should have been known to the accused infringer.[24] In essence, the court held that proof of willful infringement permitting enhanced damages would require at least a showing of objective recklessness.[25] This represented an attempt by the Federal Circuit to align the willful infringement test with the standard for willfulness in other areas of the law.[26] Specifically, the court found that the duty of due care standard "set a lower threshold for willful infringement that is more akin to negligence" which, it held, "fails to comport with the general understanding of willfulness in the civil context."[27]

Under *Seagate*, potential infringers no longer had an affirmative duty to

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17 35 U.S.C. § 298 (2012).
18 See Seagate, 497 F.3d 1360, 1385 (Fed. Cir. 2007).
19 Brian E. Ferguson, So Long, Seagate: A New Test For Willful Patent Infringement, Weil Gotshal & Manges LLP (June, 14 2016), http://www.weil.com/articles/so-long-seagate-a-new-test-for-willful-patent-infringement.
20 Fed. Trade. Commission, To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy 159 (2003).
21 Id.
22 See Seagate, 497 F.3d 1360, 1385 (Fed. Cir. 2007).
23 Id.
24 Id.
25 Id.
26 Id.
27 Seagate, 497 F.3d 1360, 1368 (Fed. Cir. 2007).

determine whether they would be infringing; rather, to avoid a finding of willfulness, they merely had a duty to avoid infringement in cases in which the risk thereof was known or so obvious that it should have been known.[28] As a result, *Seagate* removed the emphasis on the defendant obtaining the opinion of counsel and instead prompted courts to examine whether the defendant had engaged in reckless behavior or shown a disregard of the law.[29] *Seagate* also altered the standard of proof for willfulness, requiring plaintiffs in infringement cases to prove each of the two prongs of the test by clear and convincing evidence.[30] The Federal Circuit further held, in *Bard Peripheral Vascular, Inc. v. W.L. Gore & Associates., Inc.*, that the threshold determination of objective recklessness under the *Seagate* test was a question of law to be decided solely by the judge, not a jury.[31]

Following the *Seagate* decision, courts frequently granted motions for summary judgment or judgment as a matter of law on the issue of willfulness.[32] Prior to *Seagate*, it was rare for parties to move for summary judgment on the issue of willfulness, and especially rare for one of these motions to be granted.[33] However, the strict requirements for willfulness that *Seagate* imposed were difficult for plaintiffs to meet, even on motions which required the court to view the evidence in the light most favorable to the plaintiff.[34] Some courts even favored granting motions to dismiss willful infringement claims, particularly where the plaintiff did not allege that the defendant had notice of the patents.[35] While the Federal Circuit in *Seagate* had succeeded in making willful infringement more difficult to prove, patentees complained that it had restricted courts from exercising their discretion under 35 U.S.C. § 284.[36] The stage was thus set for another shift in the standard.

On June 13, 2016, the Supreme Court decided *Halo Electronics Inc. v. Pulse Electronics Inc.* and *Stryker v. Zimmer*, abrogating the *Seagate* standard and establishing a new test for willful infringement.[37] Both cases were decided under the *Seagate* framework in the Federal Circuit.[38] In both cases, the petitioners had proven patent infringement but were ultimately denied enhanced damages.[39] In *Halo*, the district court had declined to award enhanced damages, and the Federal Circuit had affirmed on appeal.[40] In *Stryker*, the district court had tripled the amount of damages, but on appeal, the Federal Circuit set aside the enhanced damages award after determining, *de novo*,

28 Id. at 1369.
29 Id.
30 Id.
31 Bard Peripheral Vascular, Inc. v. W.L. Gore & Assocs., Inc., 682 F.3d 1003, 1006 (Fed. Cir. 2012).
32 Brian E. Ferguson, supra note 20.
33 Id.
34 Id.
35 Id.
36 Id.
37 Halo Elecs.' Inc. v Pulse Elecs.' Inc., 136 S. Ct. 1923 (2016).
38 Halo Elecs.' Inc. v Pulse Elecs.', Inc., 136 S. Ct. 1923 (2016); Stryker Corp. et al v. Zimmer, Inc. et al, WL 4729504 (Fed. Cir. 2016).
39 See Halo, 136 S. Ct. 1923 (2016).
40 Id.

that the defendant's defenses at trial were objectively reasonable.[41] The Supreme Court granted certiorari in both cases to evaluate whether the two-part *Seagate* framework was consistent with the statutory language governing enhanced damages.[42]

In making this determination, the Court relied on the language of 35 U.S.C. § 284.[43] The statute states that "the court may increase the damages up to three times" but does not explicitly provide any guidelines for the determination of subjective or objective willfulness.[44] The Court specifically focused on the statute's use of the word "may," which it found "clearly connotes discretion."[45] The Court thus held that "a district court's discretion should be exercised" in deciding whether to grant enhanced damages under § 284 and that the *Seagate* test "impermissibly encumbers the statutory grant of discretion to district courts."[46] In abrogating the *Seagate* test, the Court closely paralleled the reasoning it had used in deciding *Octane Fitness, LLC v. ICON Health & Fitness, Inc.* and *Highmark Inc. v. Allcare Health Management System, Inc.*

Octane Fitness and *Highmark*, which were decided in 2014, addressed the Federal Circuit's application of 35 U.S.C. § 285, which allows courts to award attorney's fees for patent litigation to the prevailing party in "exceptional cases."[47] In *Octane*, plaintiff ICON Health & Fitness had alleged infringement of a patent for exercise machine equipment.[48] The district court granted summary judgment in favor of Octane, and Octane subsequently moved for an award of attorney's fees under Section 285 of the Patent Act.[49] However, the district court declined to grant attorney's fees, finding that the case was not an "exceptional case."[50] The Federal Circuit affirmed summary judgment on appeal, and in the process, affirmed that the case was not "exceptional."[51] In doing so, the court relied on the standard set forth in *Brooks Furniture Manufacturing v. Dutailier International, Inc.*, wherein the Federal Circuit held that exceptional cases must either involve material inappropriate conduct or litigation that is both objectively baseless and brought in subjective bad faith.[52]

The Supreme Court reversed the Federal Circuit decision, abrogating the *Brooks Furniture* standard.[53] The Court found that the test was an "overly rigid" formula which "superimposes an inflexible framework onto statutory text that is inherently flexible."[54] The Court held that district courts should exercise their full discretion and consider the totality of the circumstances when evaluating whether a case is

41 See Stryker, WL 4729504 (Fed. Cir. 2016).
42 See Halo, 136 S. Ct. 1923 (2016).
43 Id.
44 35 U.S.C. § 284 (2012).
45 See Halo, 136 S. Ct. 1923 (2016).
46 Id.
47 Octane Fitness, LLC v. ICON Health & Fitness, Inc., 134 S. Ct. 1749, 1751 (2014); Highmark Inc. v. Allcare Health Mgmt. Sys., Inc., 134 S. Ct. 1744, 1745 (2014).
48 See Octane, 134 S. Ct. 1749, 1755 (2014).
49 Id.
50 Id.
51 Id.
52 Brooks Furniture Mfg., Inc. v. Dutailier Int'l Inc., 393 F.3d 1378, 1381 (Fed. Cir. 2005).
53 See Octane, 134 S. Ct. 1749 (2014).
54 Id.

exceptional.[55] Additionally, the Court found that the requirement that litigants establish entitlement to attorney's fees by clear and convincing evidence was inappropriate.[56] Rather, the Court held that Section 285 "demands a simple discretionary inquiry" which "imposes no specific evidentiary burden, much less such a high one."[57]

In *Highmark*, the district court had granted summary judgment in favor of the defendant, finding no infringement.[58] The district court decided to award attorney's fees, finding that the case was exceptional due to plaintiff Allcare's "pattern of vexatious and deceitful conduct throughout the litigation."[59] The Federal Circuit reversed the finding of an exceptional case on appeal.[60] The Federal Circuit reviewed the case *de novo*.[61]

On appeal, the Supreme Court vacated the Federal Circuit's judgment, holding that it was improper for appellate courts to engage in *de novo* review of a district court's fee award under Section 285.[62] Relying on *Octane's* emphasis on the statutory grant of discretion to the district courts, the Court instead held that the Federal Circuit should review such awards under an abuse of discretion standard.[63]

Octane and *Highmark* represented a shift towards giving more discretion and deference to the district courts, as the governing statute had originally called for.[64] The Court in *Halo* heavily relied upon the *Octane* and *Highmark* precedents, citing them frequently for the proposition that the discretion to award fees based on the circumstances belongs to the district courts.[65] In arriving at its decision, the Supreme Court examined the 180 years of enhanced damages jurisprudence since the Patent Act of 1836, finding that "the channel of discretion had narrowed" over nearly two centuries of discretionary awards and appellate review thereof.[66] However, the Court cautioned that enhanced damages are not to be granted in typical infringement cases, and that they are reserved for conduct that is "characteristic of a pirate" or "willful, wanton, malicious, bad-faith, deliberate, consciously wrongful, [or] flagrant."[67]

In *Halo*, the Court identified three problems with the *Seagate* test. First, the Court found that *Seagate's* objective prong "excludes from discretionary punishment many of the most culpable offenders, such as the wanton and malicious pirate who intentionally infringes another's patent" because "a district court may not even consider enhanced damages for such a pirate, unless the court first determines that his

55 Id.
56 Id.
57 Id.
58 Highmark Inc. v. Allcare Health Mgmt. Sys. Inc., 134 S. Ct. 1744, 1745 (2014).
59 Id. at 1747.
60 Id.
61 Id.
62 Id.
63 Id.
64 Octane Fitness, LLC v. ICON Health & Fitness, Inc., 134 S. Ct. 1749, 1751 (2014); Highmark Inc. v. Allcare Health Mgmt. Sys. Inc., 134 S. Ct. 1744, 1745 (2014).
65 Halo Elecs.' Inc. v Pulse Elecs.' Inc., 136 S. Ct. 1923 (2016).
66 Id.
67 Id.

infringement was 'objectively' reckless."[68] Because the objective prong only required the defendant to be able to put forth a reasonable defense, the Court noted that under *Seagate*, "someone who plunders a patent—infringing it without any reason to suppose his conduct is arguably defensible—can nevertheless escape any comeuppance under § 284 solely on the strength of his attorney's ingenuity."[69]

Second, the Supreme Court eliminated the "clear and convincing evidence" standard for proving willful infringement.[70] In doing so, the Court noted that "patent-infringement litigation has always been governed by a preponderance of the evidence standard."[71] The Court found that nothing in the language of § 284 suggested applying a higher standard, particularly in light of the fact that Congress had expressly included a higher standard of proof elsewhere in the Patent Act.[72] Thus, the Court established that willful infringement need only be proven by a preponderance of the evidence.[73]

Finally, the Court unified the standards of review used on appeal of willful infringement findings in the district courts. The Federal Circuit had previously used different standards of review on appeal for different aspects of the *Seagate* test - the objective prong was subject to *de novo* review on appeal, the subjective prong was subject to review for substantial evidence, and the ultimate decision on whether to award enhanced damages was subject to review for abuse of discretion.[74] Much like in *Octane* and *Highmark*, the Court held that, because the statute committed the decision to grant enhanced damages to the district court's discretion, the abuse of discretion standard should be the sole standard of review on appeal.[75]

Enhanced Damages in the Wake of Halo

Following the *Halo* decision, there was some uncertainty about the continued role of the jury in determining willfulness, as well as about the proper application of the new rule with respect to the objective reasonableness of an infringer's defense. These questions were given some clarity by the Federal Circuit's first case applying *Halo*, *WBIP, LLC v. Kohler Co.*[76] In this case, the plaintiff held patents for emissions-reducing technology for marine generators, which it alleged Kohler had infringed.[77] The district court for the District of Massachusetts found that Kohler had infringed the patents, and that its infringement was willful.[78] Kohler appealed the willfulness determination, as well as the denial of its motion for judgment as a matter of law that the patents were invalid.[79]

On appeal, Kohler argued that the jury's verdict that it had willfully infringed

68 Id.
69 Id.
70 Id.
71 Halo Elecs.' Inc. v Pulse Elecs.' Inc., 136 S. Ct. 1923 (2016).
72 Id.
73 Id.
74 In re Seagate Tech., LLC, 497 F.3d 1360, 1369 (Fed. Cir. 2007).
75 See Halo, 136 S. Ct. 1923 (2016).
76 WBIP, LLC v. Kohler Co., 829 F.3d 1317 (Fed. Cir. 2016).
77 Id.
78 Id.
79 Id.

the patents should be overturned because of a lack of substantial evidence in the record.[80] However, the court rejected this argument, explaining, using language which has since been cited in many district court cases: "We do not interpret *Halo* as changing the established law that the factual components of the willfulness question should be resolved by the jury."[81] The court went on to state that willfulness is a question of intent, which is a classic matter for jury determination.[82]

This provides clarity as to the extent of the court's discretion in deciding to award enhanced damages. While *Halo* gave courts broader discretion to enhance infringement damages based on egregious conduct, it did not give them discretion to *find* that the conduct was willful, absent a jury determination of the same. Importantly, however, the court's discretion enables it to award *or* decline to award enhanced damages following a finding of willfulness. The Supreme Court made this explicit in *Halo*: "none of this is to say that enhanced damages must follow a finding of egregious misconduct."[83]

The Federal Circuit in *WBIP* also addressed the argument, commonly made under the *Seagate* standard, that the fact that the defendant was able to muster a reasonable defense for trial precludes a finding of willfulness.[84] The court explained that *Halo* effectively did away with this defense.[85] Kohler argued that its invalidity defense was reasonable regardless of the fact that it was contrived for litigation, but the court rejected this argument, stating that under the new *Halo* rule, the timing of the defense does matter.[86] A good-faith belief that the patent was invalid may have been a defense to willful infringement if such a belief was developed prior to litigation, but, as the Federal Circuit explained, "Kohler cannot insulate itself from liability for enhanced damages by creating an (ultimately unsuccessful) invalidity defense for trial after engaging in the culpable conduct of copying, or plundering, WBIP's patented technology prior to litigation. Proof of an objectively reasonable litigation-inspired defense to infringement is no longer a defense to willful infringement."[87]

Cases Decided Under Both Seagate and Halo

The difference in the pre- and post-*Halo* willfulness standard can be observed most directly in the cases which were decided under both. There are a number of cases which were decided at the trial level under the *Seagate* standard, were appealed, and were remanded back to the trial court to be decided under the *Halo* framework.

This was the case in *Innovention Toys, LLC v. MGA Entertainment, Inc.*[88]

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80 Id.
81 Id.
82 WBIP, LLC v. Kohler Co., 829 F.3d 1317 (Fed. Cir. 2016).
83 Halo Elecs.' Inc. v Pulse Elecs.' Inc., 136 S. Ct. 1923 (2016).
84 See WBIP, 829 F.3d 1317 (Fed. Cir. 2016).
85 Id.
86 Id.
87 WBIP, LLC v. Kohler Co., 829 F.3d 1317 (Fed. Cir. 2016), (quoting Halo Elecs.' Inc. v Pulse Elecs.' Inc., 136 S. Ct. 1923 (2016)).
88 Innovention Toys, LLC v. MGA Entm't, Inc., 667 Fed.Appx. 992, 993 (Fed. Cir. 2016).

In *Innovention*, the plaintiff, a seller of toys, alleged that the defendant, a competitor, infringed its patent for a laser board game.[89] The jury found that MGA had infringed Innovention's patent, and the trial judge determined that the infringement was willful and tripled the damages.[90] On appeal, the Federal Circuit held that although the jury had rejected MGA's defense, it was not objectively unreasonable under the objective prong of the *Seagate* test.[91] The Supreme Court granted certiorari following its decision in *Halo*, and subsequently vacated the Federal Circuit's decision and remanded the case to the Federal Circuit for reconsideration under the new *Halo* standard.[92]

In re-examining *Innovention*, the Federal Circuit concluded that, in the absence of the objective reasonableness standard that had persisted under *Seagate*, there was no longer a basis to vacate the trial court's willfulness determination.[93] However, the Federal Circuit held that remand to the district court was not necessary on the issue of willfulness, as the trial jury had found willful infringement based on *Seagate*, which had a more demanding standard of proof than that of *Halo*.[94] The Federal Circuit specifically noted that the second part of the *Seagate* test - whether the risk of infringement was either known or so obvious that it should have been known to the accused infringer - satisfied the required finding of subjectively willful misconduct.[95] The case was then remanded to the district court for the discretionary determination of whether to award enhanced damages.[96]

WesternGeco L.L.C. v. ION Geophysical Corporation presented another opportunity for the Federal Circuit to re-evaluate a decision made under *Seagate*.[97] In this case, WesternGeco, a maker of geophysical measurement equipment, alleged that ION Geophysical had infringed a patent on a device used for exploring natural resources below the ocean floor.[98] The trial jury found that WesternGeco had "proven by clear and convincing evidence that ION actually knew, or it was so obvious that ION should have known, that its actions constituted infringement of a valid patent claim."[99] However, on a renewed motion for judgment as a matter of law, the district court judge determined that there was insufficient evidence for a reasonable jury to find willfulness by clear and convincing evidence.[100] On appeal, the denial of enhanced damages for willfulness was upheld by the Federal Circuit, which found that the objective prong of the *Seagate* test had not been satisfied because ION's defenses were not unreasonable.[101]

Following the *Halo* decision, the Supreme Court granted certiorari in

89 Innovention Toys, LLC v. MGA Entm't, Inc., 665 F.Supp.2d. 636, 639 (E.D. La. 2009).
90 Id.
91 Innovention, 667 Fed.Appx., 993 (2016).
92 Id.
93 Id.
94 Id.
95 Id.
96 Id.
97 See WesternGeco L.L.C. v. ION Geophysical Co., 837 F.3d 1358, 1360 (Fed. Cir. 2016).
98 WesternGeco L.L.C. v. ION Geophysical Co., 953 F.Supp.2d. 731, 739-40 (S.D. Tex. 2013).
99 Id.
100 See WesternGeco, 837 F.3d 1358, 1363-64.
101 Id.

WesternGeco.[102] The Court vacated the Federal Circuit's decision and remanded the case back to the appellate level for further consideration of the issue of enhanced damages in light of the new law.[103] On remand, the Federal Circuit vacated the district court's finding of no willful infringement and remanded the case back to the district court for a new determination to be made both on the issue of willfulness and on whether to award enhanced damages.[104] Despite the lower standard of proof for willfulness under *Halo* as opposed to *Seagate*, the Federal Circuit was unable to avoid remanding the issue of willfulness, as it had done in *Innovention*.[105] This is because in *Innovention*, the jury had found that both prongs of the *Seagate* test were satisfied, and the Federal Circuit was able to substitute the affirmative finding of the second prong by clear and convincing evidence for a finding of subjective willfulness by a preponderance of the evidence.[106] In *WesternGeco*, the jury found willfulness, but the judge granted a motion for judgment as a matter of law on the basis that the objective prong was not met.[107] Because satisfying the objective prong of the *Seagate* test was a prerequisite for evaluating the subjective prong, the district court did not actually issue a ruling on the subjective willfulness of ION's infringement.[108] Rather, in its original opinion, the district court noted that the jury had found subjective willfulness, but declined to evaluate the jury's finding, as the threshold requirement of objective recklessness was not met.[109]

While *Halo* did away with the objective prong of the *Seagate* test - meaning that simply presenting an "objectively reasonable" defense at trial is no longer a defense to willful infringement - the reasonableness of the defense may still be relevant to determining willfulness. In *Greatbatch Ltd. v. AVX Corporation*, the federal district court in Delaware found that an invalidity defense developed prior to litigation could preclude a finding of willful infringement.[110] In *Greatbatch*, the defendant had moved for summary judgment of no willful infringement prior to trial.[111] The court granted the motion, issuing a willfulness order stating that the defendant's infringement of the patents in suit was not willful.[112] In making this determination, the court relied on the *Seagate* standard for willful infringement.[113] After *Halo* was decided, Greatbatch moved to vacate the willfulness order on the basis of the change in the legal standard.[114]

Upon reevaluation of the willfulness order, the court determined that the order did not need to be vacated, despite the fact that the order had been based on *Seagate*'s objective prong.[115] The court had considered the reasonableness of AVX's defenses

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102 WesternGeco L.L.C. v. ION Geophysical Co., 136 S. Ct. 2486, 2486 (2016).
103 Id.
104 WesternGeco L.L.C. v. ION Geophysical Corporation, 837 F.3d 1358 (Fed. Cir. 2016).
105 Id.
106 Innovention Toys, LLC v. MGA Entm't, Inc., 667 Fed.Appx. 992, 993 (Fed. Cir. 2016).
107 WesternGeco L.L.C. v. ION Geophysical Corporation, 837 F.3d 1358 (Fed. Cir. 2016).
108 WesternGeco L.L.C. v. ION Geophysical Corporation, 953 F.Supp.2d 731 (S.D. Tex. 2013).
109 Id. at 751.
110 Greatbatch Ltd. v. AVX Corp., 2016 WL 7217625 (Del. Dist. Ct.).
111 Id.
112 Id.
113 Id.
114 Id.
115 Id.

to infringement, but it asserted that this was not in violation of *Halo*.[116] The court had specifically considered AVX's invalidity defenses, which had been developed prior to trial.[117] The court found that these defenses - that the patents were invalid - were known to AVX at the time of the allegedly infringing conduct, and thus were relevant to the determination of subjective intent.[118] In considering these circumstances, the court declined to vacate its willfulness order, holding that a reasonable jury could not find that the defendant's infringement was willful.[119]

Impact of Halo on Motions to Dismiss

One noteworthy source of confusion following the *Halo* decision was how willful infringement is to be addressed at the motion-to-dismiss stage. On a motion to dismiss, governed by Federal Rule of Civil Procedure 12(b)(6), the defendant asserts that the plaintiff's complaint fails to state a claim upon which relief can be granted.[120] When a motion to dismiss is made, courts examine whether the complaint alleges facts, which, taken as true, would give rise to an entitlement to relief.[121]

On motions to dismiss claims of willful infringement, courts require the complaint to allege the defendant's knowledge of the patent in suit. Beyond that, however, courts post-*Halo* have taken disparate approaches as to what constitutes sufficiently detailed pleadings to survive the motion.[122]

A number of courts, in considering motions to dismiss, have required only that the plaintiff allege the defendant's knowledge of the patent. Naturally, these courts have favored allowing the issue of egregiousness to go to the jury. Courts taking this approach have included district courts in the District of Delaware, Eastern District of Tennessee, Eastern District of Virginia, and the Eastern District of Texas.[123] In these cases, courts have held that the defendant's pre-suit knowledge of the patent is sufficient to allege willful infringement, although at the motion-to-dismiss stage, willful infringement need only be plausibly supported by the facts alleged to be true.[124] As a result, knowledge has, in some cases, been presumed based on alleged facts which make knowledge plausible.[125]

For example, in *Malibu Boats LLC v. Mastercraft Boat Company LLC*, a case filed in the Eastern District of Tennessee, the plaintiff filed its complaint on the same day the patent issued.[126] The plaintiff's complaint alleged willful infringement and requested

116 See Greatbatch, 2016 WL 7217625 (Del. Dist. Ct.).
117 Id.
118 Id.
119 Id.
120 Fed. R. Civ. P. 12.
121 Bell Atlantic Corp. v. Twombly, 550 U.S. 544 (2007); Ashcroft v. Iqbal, 556 U.S. 662 (2009).
122 Natalie Hanlon Leh, & Michael Silhasek, 2 Ways Courts Approach Willful Infringement After Halo, Law360 (Jan. 18, 2017, 12:35 PM), https://www.law360.com/ip/articles/876994/2-ways-courts-approach-willful-infringement-after-halo.
123 Id.
124 See Ashcroft, 556 U.S. 662.
125 Leh & Silhasek, supra note 123.
126 Malibu Boats, LLC v. Mastercraft Boat Co., 3:16-cv-82-TAV-HBG (E.D. Tenn. Oct. 28, 2016).

enhanced damages based on the defendant's knowledge of patent, which it supported by alleging the defendant's knowledge of the notice of allowance and issue notification for the patent.[127] The district court denied the motion to dismiss and opted to allow the claim for willful infringement to go forward.[128] In doing so, the court noted that the defendant's conduct before the patent could support a finding of willfulness.[129]

Similarly, in *Blitzsafe Texas LLC v. Volkswagen*, the plaintiff alleged willful infringement and the defendant moved to dismiss the claim.[130] Specifically, the plaintiff alleged that the defendant had engaged in willful infringement both before and after the lawsuit was filed.[131] As to pre-suit willfulness, the defendant argued that the motion to dismiss should be granted because the pre-suit knowledge alleged regarded the patent application, not the issued patent.[132] However, the court denied the motion with respect to pre-suit willful infringement, finding that the defendant had cited the plaintiff's patent application in an inter partes re-examination proceeding, at which point in time the patent had already issued.[133] The court concluded that the defendant could, plausibly, have gained knowledge of the patent through this proceeding.[134] The court also denied the motion with respect to post-suit willfulness, finding that the defendant continued to engage in the infringing activity after the suit had been filed and, thus, after it had been put on notice of the asserted patent.[135] The court found that these facts, taken to be true, plausibly demonstrated that the defendant had willfully infringed the patent.[136]

While some courts have required only allegations of pre-suit knowledge to allow the claim to move beyond the motion-to-dismiss stage, others have been more stringent in granting dismissal. Courts in the District of Delaware and District of Nevada have held that allegations of knowledge alone are insufficient, instead requiring plaintiffs to additionally allege egregious conduct.[137]

In *CG Technology Development LLC v. Big Fish Games Inc.*, a case decided in the District of Nevada, the defendant moved to dismiss the plaintiff's claims of willful infringement.[138] The court granted the motion, finding that the plaintiff's allegations were conclusory and did not allege facts beyond knowledge of the asserted patent.[139] The court held that the complaint did not allege any facts which would suggest the defendant acted egregiously.[140] In granting the motion to dismiss, the court cited Justice Breyer's concurrence from *Halo*, emphasizing the majority opinion's words: "enhanced

127 Id.
128 Id.
129 Id.
130 Blitzsafe Texas, LLC v. Volkswagen Grp of Am. Inc., 2016 WL 4778699, (E.D. Tex. Aug. 19, 2016).
131 Id.
132 Id.
133 Id.
134 Id.
135 Id.
136 See Blitzsafe, 2016 WL 4778699.
137 Leh & Silhasek, supra note 123.
138 CG Tech. Dev., LLC v. Big Fish Games, Inc., 2016 WL 4521682, at 1 (D. Nev. Aug. 29, 2016).
139 Id.
140 Id.

damages are generally appropriate under § 284 only in egregious cases."[141] The court further quoted the concurrence, pointing out that "the Court's references to 'willful misconduct' do not mean that a court may award enhanced damages simply because the evidence shows that the infringer knew about the patent *and nothing more*."[142] This language is frequently cited in cases granting motions to dismiss for failure to allege more than mere knowledge of the patent.

Impact of Halo on Findings of Egregiousness and Enhanced Awards

It is clear that while *Halo* gives district courts discretion to award enhanced damages following a finding of willful infringement, it does not mandate them to do so. The Supreme Court said as much when it wrote that "Awards of enhanced damages . . . are not to be meted out in a typical infringement case, but are instead designed as a 'punitive' or 'vindictive' sanction for egregious infringement behavior. The sort of conduct warranting enhanced damages has been variously described in our cases as willful, wanton, malicious, bad-faith, deliberate, consciously wrongful, flagrant, or—indeed—characteristic of a pirate."[143] This language from *Halo* has been cited in nearly every district court decision finding willfulness but declining to award enhanced damages.[144]

No longer bound by the *Seagate* framework, district courts have commonly relied on the nine factors articulated in *Read Corp. v. Portec, Inc.* for determining when an infringer "acted in [such] bad faith as to merit an increase in damages awarded against him."[145] These nine factors include questions of the infringer's conduct, intent, behavior in litigation, size and financial condition.[146] The *Read* factors were frequently employed in the eras of *Underwater Devices* and *Seagate*, but have gained newfound importance in the post-*Seagate* world. The factors have been used as a framework for analysis in numerous cases decided under *Halo*, and their use - albeit in a small sample of cases - has not been predictive of the final enhanced damages determination. The *Read* factors have been cited in cases in at least five different district courts - in the Northern District of California, the District of Delaware, the Eastern District of Pennsylvania, the Eastern District of Texas, and the Northern District of New York - and in cases both awarding and declining to award enhanced damages.[147] However, the *Read* factors are not always considered in determining whether to award enhanced damages. In several cases, courts

141 Id.
142 Id.
143 Halo Elecs.' Inc. v. Pulse Elecs.' Inc., 136 S. Ct. 1932 (2016).
144 Presidio Components, Inc. v. Am. Tech. Ceramics Corp., 2016 WL 4377096, at *20 (S.D. Cal. Aug. 17, 2016); XY, LLC v. Trans Ova Genetics, LLC, 2016 WL 6664619, at *3 (D. Colo. Nov. 10, 2016); Sociedad Espanola de Electromedicina y Calidad, S.A. v. Blue Ridge X-Ray Co., 226 F. Supp. 3d 520 (W.D.N.C. 2016).
145 Read Corp. v. Portec, Inc., 970 F.2d 816, 825 (Fed. Cir. 1992) (citing Bott v. Four Star Corp., 807 F.2d 1567, 1572 (Fed. Cir. 1986)).
146 Read Corp., 970 F.2d at 827.
147 Finjan, Inc. v. Blue Coat Sys., Inc., No. 13-CV-03999-BLF, 2016 WL 3880774 (N.D. Cal. July 18, 2016); Radware, Inc. v. F5 Networks, Inc., 147 F.Supp.3d 974 (N.D. Cal. 2015); Greatbatch Ltd. v. AVX Corp., No. CV 13-723-LPS, 2015 WL 9171042 (D. Del. Dec. 11, 2015); Dominion Res. Inc. v. Alstom Grid, Inc., No. CV 15-224, 2016 WL 5674713 (E.D. Pa. Oct. 3, 2016); Imperium IP Holdings (Cayman), Ltd. v. Samsung Elecs. Co., No. 4:14-CV-371, 2015 WL 137419 (E.D. Tex. Jan. 9, 2015).

have expressly declined to use the *Read* factors, instead opting to consider the totality of the circumstances.[148] Nonetheless, *Read* remains a useful and straightforward method of analyzing the facts weighing in favor of and against a finding of egregiousness, and even courts that have not explicitly applied the nine factors have engaged in some sort of similar balancing test.[149]

While *Read* provided nine factors for determining whether infringement was sufficiently egregious to warrant an award of enhanced damages, it is clear that each of the factors has not been given equal weight in their application post-*Halo*.[150] Courts have given extra significance to certain factors, particularly those demonstrating the defendant's bad-faith conduct during litigation or its good-faith belief in its defenses of invalidity or non-infringement.[151]

In the cases decided under *Halo*, bad-faith conduct has weighed strongly in favor of a finding of egregiousness.[152] Bad-faith conduct that has been taken into account includes particularly egregious infringing conduct, such as copying, as well as disingenuous conduct during litigation.

Both types of bad-faith conduct were examined in *Imperium IP Holdings v. Samsung*.[153] *Halo* was decided during the period in between the jury's verdict and the final judgment.[154] Much like in *Innovention*, the jury had returned a verdict of willful infringement under the *Seagate* test, and the court, using its discretion, reconsidered whether the jury's finding would stand in light of the abrogation of *Seagate*.[155] Employing logic similar to, and in fact citing the precedent of *Innovention*, the *Imperium* court held that the jury's finding of willfulness under the *Seagate* test satisfied the *Halo* standard.[156] Specifically, the court held that the jury's finding of subjective willfulness - the second prong of the *Seagate* test - was a sufficient basis for a willfulness determination under *Halo*.[157]

In determining whether to exercise its discretion to award enhanced damages, the *Imperium* court considered the *Read* factors, although it was careful to note that the factors are non-exclusive and that the ultimate determination must be focused on the egregiousness of the infringing conduct.[158] The court framed its analysis of the defendant's conduct using the *Read* factors, and focused particularly on the defendant's

148 Trustees of Bos. Univ. v. Everlight Elecs. Co., 212 F.Supp.3d 254, 256 (D. Mass. 2016); Sociedad Espanola de Electromedicina y Calidad, v. Blue Ridge X-Ray Co., No. 1:10-CV-00159-MR, 2016 WL 3661784, at *2 (W.D.N.C July 08, 2016).

149 See Sociedad Espanola de Electromedicina y Calidad, v. Blue Ridge X-Ray Co., No. 1:10-CV-00159-MR, 2016 WL 3661784, at *2 (W.D.N.C July 08, 2016).

150 Donald Steinberg, et al., 4 Factors Influencing Enhanced Damages After Halo, Law360 (Jan. 17, 2017), https://www.law360.com/articles/876993/4-factors-influencing-enhanced-damages-after-halo/.

151 Id.

152 Id.

153 Imperium IP Holdings (Cayman), Ltd. v. Samsung Elecs. Co., No. 4:14-CV-371, 2015 WL 137419 (E.D. Tex. Jan. 9, 2015)).

154 Id.

155 Id.

156 Id.

157 Id.

158 Id.

lack of a good-faith belief as to non-infringement or the patent's validity, the defendant's misrepresentations under oath, and the defendant's failure to be forthcoming with requested documents and information during litigation.[159] In applying the *Read* factors to the facts of the case, the court found that the defendant had copied the plaintiff's patented design after receiving detailed information about it, and was unable to produce evidence that it had independently designed the technology in question.[160] In consideration of these facts, the court ultimately awarded treble damages.[161]

Bad-faith conduct was also considered in *Dominion Resources v. Alstom Grid* as a factor weighing in favor of egregiousness.[162] In this case, the defendant had made several misrepresentations to the plaintiff regarding its use of the infringing technology.[163] Furthermore, the defendant intentionally delayed producing information about its infringing conduct, both before and after the lawsuit was filed.[164] It was not until third-party discovery that the plaintiff gained access to the information the defendant had withheld.[165] Alstom Grid's concealment of its conduct and its failure to be forthcoming during litigation was found to be indicative of bad faith, and the court held that its conduct was willful and egregious, and subsequently awarded enhanced damages.[166]

The *Read* factors again provided a guide for analysis of culpability in *Finjan v. Blue Coat Systems*.[167] In evaluating whether to award enhanced damages for Blue Coat's infringement of Finjan's patent, the district court in the Northern District of California analyzed each of the *Read* factors.[168] Although the court included language similar to that in *Imperium*, noting that the *Read* factors are not exclusive and are not the sole test for egregious conduct, it then relied on its analysis of the factors, without discussing any other factors or considerations, in concluding that enhanced damages were not warranted.[169]

Notably, in *Finjan*, the court considered the defendant's knowledge of the allegedly infringed patents, finding that although the evidence suggested the defendant was aware of and had discussed its competitor's product, it had not copied the product.[170] Perhaps even more significantly, the court found that the defendant had reasonable good-faith non-infringement and invalidity defenses.[171] This is important because following *Halo*, there was uncertainty about the continued role of the "reasonable defense" argument in defending willful infringement claims. It is

159 Imperium IP Holdings (Cayman), Ltd. v. Samsung Elecs. Co., Ltd., 2016 WL 4480542 (E.D. Tex. Aug. 24, 2016).
160 Id.
161 Id.
162 Dominion Resources Inc. v. Alstom Grid, Inc., 2016 WL 5674713 (E.D. Pa. October 3, 2016).
163 Id.
164 Id.
165 Id.
166 Id.
167 Finjan, Inc. v. Blue Coat Sys., Inc., 2016 WL 3880774 (N.D. Cal. July 18, 2016).
168 Id.
169 Id.
170 Id.
171 Id.

clear from cases like *Finjan*, *Greatbatch*, and the cases that will be discussed below that the reasonableness of defenses is still a relevant consideration in evaluating the egregiousness of infringing activity. While *Halo* did eliminate reasonable defenses as a dispositive argument against willfulness, the reasonableness of the defendant's conduct remains an important factor in determining whether its conduct was sufficiently egregious to warrant enhanced damages.

In the wake of *Halo*, evidence of good-faith conduct has weighed strongly in favor of a finding of no egregiousness.[172] Good-faith conduct that has been considered includes investigating the scope of the existing patent landscape and seeking out opinions as to the likelihood of infringement or the validity of existing patents.

These considerations were pivotal in *Sociedad Espanola de Electromedicina y Calidad, S.A. v. Blue Ridge X-Ray Co, Inc.*[173] In this case, which was decided in the Western District of North Carolina, a jury found that the defendant's infringement was willful based on the evidence presented at trial.[174] However, the district judge declined to award enhanced damages, employing reasoning similar to that in *Greatbatch* in considering the reasonableness of the defendant's conduct in light of its own determination that the patent was likely invalid.[175] Presumably this internal determination had been made by someone qualified to evaluate the validity of patents; the opinion indicates that the defendant's head engineer had reached the conclusion that the patent was likely invalid.[176] Here, like in *Greatbatch*, the objective reasonableness of the defense was considered not as a bar to a finding of willfulness, but as a factor weighing in favor of the defendant's good-faith belief that its conduct was not infringing.[177] Notably, the court in *Sociedad Espanola* declined to use the framework of the *Read* factors to guide its analysis, noting that "while consideration of the *Read* factors may be helpful, they are not dispositive of the issue at hand."[178]

Though it may seem at first blush that infringement which is found to be willful under *Seagate* will always meet the requirements of *Halo*, this is not so. In *Trustees of Boston University v. Everlight Electronics Co., Ltd., et al.*, the jury had returned a verdict of willful infringement after receiving jury instructions based on the *Seagate* test.[179] The plaintiff argued that the jury's willfulness finding was binding on the court, and that the finding required the awarding of enhanced damages.[180] According to the plaintiff's argument in this case, the discretion granted to the court extended only to the amount of the enhanced damages, not whether to award them.[181] The defendants argued that the court should disregard the jury's finding of willful infringement because it was based on

172 Donald Steinberg, supra note 151.
173 Sociedad Espanola de Electromedicina y Calidad, v. Blue Ridge X-Ray Co., No. 1:10-CV-00159-MR, 2016 WL 3661784, at *2 (W.D.N.C July 08, 2016).
174 Id.
175 Id.
176 Id.
177 Id.
178 Id.
179 Trs. of Boston Univ. v. Everlight Elecs.' Co., 212 F.Supp.3d 254, 258 (D. Mass. 2016).
180 Id. at 255.
181 Id.

the *Seagate* standard.[182]

The court declined to adopt or reject the jury's finding of willfulness under *Seagate*.[183] The plaintiff argued that the finding was binding on the court using essentially the same reasoning that had been used in *Innovention* - that the subjective prong of the *Seagate* test fulfilled the requirement of subjective recklessness required under *Halo*.[184] This determination would turn out to be immaterial, as the court exercised its discretion and held that regardless of whether the infringement was willful, it was not sufficiently egregious to merit an award of enhanced damages.[185] In arriving at this conclusion, the court made note of the *Read* factors, but seemed to focus its analysis on the totality of the circumstances, which it opined suggested good-faith conduct on the part of the defendant.[186] Specifically, the court noted that one of the defendants had hired two law firms to provide infringement opinions and had also contracted with a third party to test its accused products.[187]

It is clear from the infringement cases following the *Halo* decision that courts place a high value on a defendant having done its due diligence to determine whether it is likely to be infringing. This may be done in one or more ways. First, a potential infringer can obtain a non-infringement opinion. While this is costly, courts have routinely considered pre-litigation consultation with patent attorneys and procurement of non-infringement opinions to be substantive evidence of good-faith conduct.[188] Although it may be more cost-effective for potential infringers to employ the "wait and see" approach - i.e. to infringe the patent in the short term and plan to retain counsel in the event that an infringement suit is filed - courts post-*Halo* have refused to consider defenses "contrived for litigation."[189] In fact, the Supreme Court in *Halo* specifically condemned this type of conduct in abrogating the *Seagate* test: "Under [*Seagate*], someone who plunders a patent—infringing it without any reason to suppose his conduct is arguably defensible—can nevertheless escape any comeuppance under § 284 solely on the strength of his attorney's ingenuity."[190]

Alternatively, a potential infringer may opt to forego obtaining a formal non-infringement opinion from an attorney and instead have in-house staff render an opinion as to the likelihood of infringement. However, this course of action is less likely to preclude a finding of willful infringement than obtaining an opinion from a patent attorney. In fact, in *Halo*, the infringer had relied on the opinion of its engineer that a patent was invalid, and the lower court had nonetheless found willful infringement, leading to the appeal and vacatur of the enhanced damage award at the Federal Circuit under the *Seagate* test which ultimately served as the basis for the Supreme Court's

182 Id.
183 Id.
184 See Trs. of Boston Univ., 212 F.Supp.3d 254, 256.
185 Id. at 257.
186 Id. at 258.
187 Id.
188 See id.
189 WBIP, LLC v. Kohler Co., 829 F.3d 1317 (Fed. Cir. 2016).
190 Halo Elecs.' Inc. v Pulse Elecs.' Inc., 136 S. Ct. 1923 (2016).

grant of certiorari.[191] Obtaining an opinion from a non-attorney still may serve as evidence of good-faith conduct, but for this to be true, the person rendering the opinion must be qualified to do so. For example, in *Sociedad Espanola*, the company's head engineer opined that the patent in question was likely invalid, and the court found that this was evidence of good faith precluding a finding of egregious conduct.[192] Conversely, in *Dominion Resources*, a case decided in the Eastern District of Pennsylvania, the defendant's non-infringement opinion was not considered as evidence of good-faith conduct because the opinion was written by people who did not have any expertise in reading patent claims.[193] Similarly, in *Arctic Cat. v. Bombardier Recreational Products*, the defendant had an employee review the patents in question and render an invalidity analysis, but the court found that the employee failed to review all of the claims or to provide a thorough analysis to the defendant, and as such the defendant had not formed a good-faith belief that the patents were invalid.[194]

Potential Repercussions of Halo

There has been some concern among commentators following the *Halo* decision that the lowered bar for enhanced damages may embolden patent trolls.[195] Ostensibly, the prospect of treble damages for infringement would boost non-practicing entities' ability to extract licensing fees or settlements from potential infringers. However, the Supreme Court attempted to limit this risk in the decision, explaining that enhanced damages are to be reserved for "egregious case" and are not to be awarded in "garden-variety cases."[196] The decision has been praised for potentially creating more consequences for infringers who take the high-risk, high-reward route of commercializing technology without first determining whether it is already subject to patent protection. Under *Seagate*, this tactic of "willful ignorance" had been allowed to continue with success in litigation, because *Seagate* did not consider whether non-infringement or invalidity defenses were obtained in advance of the alleged infringement or were merely contrived for litigation.[197] Under *Halo*, however, district courts are able to award punitive damages against parties who engage in this behavior, which demonstrates a clear disregard for the intellectual property rights that patent laws are intended to protect.

Of some concern following *Halo* is the role it may play in the prevalence of forum shopping. Forum shopping is already a concern in the area of patent litigation

191 Id.

192 Sociedad Espanola de Electromedicina y Calidad, S.A. v. Blue Ridge X-Ray Co., No. 1:10-CV-00159MR, 2016 WL 7473422, *1-3 (W.D.N.C. Dec. 28, 2016).

193 Dominion Resources Inc. v. Alstom Grid, Inc., No. 15-224, 2016 WL 5674713 (E.D. Pa. October 3, 2016).

194 Arctic Cat Inc. v. Bombardier Recreational Products, Inc., 198 F. Supp. 3d 1343 (S.D. Fla. July 27, 2016).

195 Chase Means, Has the Supreme Court Breathed New Life into Patent Trolls in Halo and Stryker?, IP-Watchdog (June 15, 2016) http://www.ipwatchdog.com/2016/06/15/supreme-court-patent-trolls-halo-stryker/id=70050/.

196 Halo Elecs.' Inc. v Pulse Elecs.' Inc., 136 S. Ct. 1923 (2016).

197 Global Traffic Techs. LLC v. Morgan, 620 F.App'x 895, 904 (Fed. Cir. 2015) ("[Seagate] requires analysis of all of the infringer's non-infringement and invalidity defenses, even if those defenses were developed for litigation.").

- the Eastern District of Texas, notorious for its local rules making it difficult to defend infringement in its courts, was the home of nearly 44% of the nation's patent infringement suits in 2015.[198] Giving district courts greater discretion to award enhanced damages, while simultaneously increasing the standard of review for those determinations, could lead to even more favorable local forums for patent suits. Recently, there has been a push to eliminate forum shopping from patent law. Congress tried unsuccessfully to pass the Venue Act in 2016, which would have made it more difficult to file suits in venues where one does not directly reside or do business.[199] Furthermore, the Supreme Court recently granted certiorari in *TC Heartland v. Kraft Foods*, concerning "whether 28 U.S.C. § 1400(b) is the sole and exclusive provision governing venue in patent infringement actions and is not to be supplemented by 28 U.S.C. § 1391(c)."[200] Even if the Court makes it more difficult for plaintiffs to file suit in places like eastern Texas, the problem of inconsistency between courts will persist.

Uniformity between district courts is an important objective. Having predictable law enables parties to conform their conduct to the law and, if necessary to make informed settlement decisions. Granting such broad discretion to district courts, with such vague criteria for awarding enhanced damages, is bound to result in inconsistency between courts. The alteration of the standard of review will also limit remedies for a party wishing to appeal an award or denial of enhanced damages, as the 'abuse of discretion' standard is difficult to overcome.

Conclusion

Following the Supreme Court's decision in *Halo*, district courts have taken a number of different approaches to applying the new rule. Which approach is employed depends not only on the individual court, but also on the type of disposition.

On motions for dismissal, courts have taken two disparate approaches. Some courts have required only that knowledge of the asserted patents be alleged, ostensibly on the theory that pre-suit knowledge of the patents, if proven, would constitute the type of egregious conduct warranting enhanced damages. Other courts have been more demanding of plaintiffs, requiring allegations of knowledge *and* egregious conduct in order to progress past the motion-to-dismiss stage.

Application of *Halo* at the trial stage has been similarly inconsistent, if not unpredictable. District courts have frequently used the *Read* factors as a guide when analyzing egregiousness of the infringing conduct. The factors which have been given the most weight are those which relate to the good-faith or bad-faith conduct of the infringer. In particular, evidence of copying, failure to investigate the scope of the existing

198 : Lisa Shuchman, Eastern Texas Had an 'Astounding' Number of Patent Cases in 2015, Corporate Counsel: IP Insider (January 7, 2016) http://www.corpcounsel.com/id=1202746460787/Eastern-Texas-Had-an-Astounding-Number-of-Patent-Cases-in-2015?slreturn=20170008121603.

199 Jeff John Roberts, Supreme Court to Mess With Texas Over Patents, Fortune (Dec. 16, 2016), http://fortune.com/2016/12/16/supreme-court-patent-venue/

200 Douglas Kim and Lance Lawson, Supreme Court to Hear "The Republic of Texas is No More" Patent Venue Case; A Potential Blow to Patent Trolls, JDSupra (Jan. 6, 2017) http://www.jdsupra.com/legalnews/supreme-court-to-hear-the-republic-of-33306/.

patents, and failure to obtain opinions of counsel as to non-infringement or invalidity was considered strong evidence of willfulness or egregiousness.

Going forward, parties filing patent infringement suits should be mindful of the approach to enhanced damages taken by the particular court in which they file. This is especially true given the Supreme Court's upcoming decision in *TC Heartland*, which is likely to significantly reduce the filing options for plaintiffs wishing to choose a favorable venue. For this reason, identifying the courts in which the defendant is subject to personal jurisdiction which are most amenable to enhanced damage awards may very well become common practice in the near future.

Conflicting Ideas: Broadband, FCC, and New York

Nicholas Fedorka

Abstract

The Federal Communications Commission adopted the "2015 Open Internet Order" on February 26, 2015 and released it to the public a month later. This order changed how the federal government, and subsequently individual states, view broadband internet services. More specifically, it reclassified broadband as a "telecommunications service," which subjects it to common carrier regulations. Interestingly, federal statutes enable, and even sometimes require, individual states to assist with the regulation process. Therefore, the Federal government is taking the parental role with broadband regulation by preempting states that do not follow the "federal scheme." This leaves individual States, such as New York, in a conundrum when attempting to navigate federal broadband regulations. This article will review how the 2015 Open Internet Order has, and will, impact New York. Furthermore, it will analyze how far into the realm of broadband regulation New York should indulge. Finally, it will analyze how an administration change in the Executive branch of the United States Government will effect these conclusions.[1]

I. INTRODUCTION

a. BROADBAND? BROADBAND? WE ARE TALKING ABOUT BROADBAND?

Imagine waking up in the middle of the night with a cold sweat, coming back to reality from a reoccurring nightmare. You walk into a class in high school and have not completed your homework. Your irate teacher makes an example out of you for your lack of due diligence. "How will you be successful in life with such a lack of preparation?" she asks. You are embarrassed but also mad for allowing this situation to occur.

Most often your failure to complete the assignment was due to lack of planning. You are responsible for your actions and your actions alone. We, as a society, believe that people should be held accountable for their actions. But, if one's actions are not caused by their own will then we, as a society, find that such a person should be less culpable.

Now, for the sake of argument, let's change the facts above. Like before, you are still unable to hand in your homework for class. But instead of prior obligations, you physically could not complete your homework. This is because your family's residence is not properly connected to the Internet. Moreover, most of your homework must be completed or submitted online. You do not own a laptop with the capability to access

1 I would like to personally thank everyone affiliated with Public Utility Law Project of New York, Inc. for introducing me to this topic. Specifically, I would like to thank Richard Berkley, Lisabeth Jorgensen, Rosa Maria Castillo-Kesper, William Yates, and Gerald Norlander for their continued guidance and support.

public Wi-Fi because computers are extremely expensive. It is also a long trip to a public library or other entity that has public access to computers with Internet capability. It is not because of your lack of planning that you cannot complete your homework, but due to unforeseen circumstances that are out of your control.

Sadly, this nightmare is a reality for many children in the United States. Both rural and urban areas have limited broadband Internet connectivity. Only 67% of American's have broadband at home, which has decreased close to 3% since 2013.[2] The PEW Research Center indicates that this downward trend in home high-speed adoption has taken place at the same time there has been an increase in adults who use smartphones to access the Internet.[3] Also, 15% of American adults report that they have become "cord cutters," which means they have abandoned paid cable or satellite television services.[4]

Roughly two-thirds of American's indicate not having home high-speed internet connection would be a major disadvantage of finding a job.[5] One-third of Americans state that the monthly cost of service is the main reason they lack broadband at home.[6] PEW also reported that 40% of non-high speed Internet users state being without broadband Internet is a major disadvantage for learning about or accessing government services.[7]

Due to these staggering numbers, the Obama Administration began a "Connecting America" initiative in 2009.[8] The basic premise of the initiative is to increase broadband deployment to underserved areas.[9] Moreover, the administration argued that "broadband and fluency with technology fuel economic growth, provide access to the world's knowledge, promote skill development, and build stronger and more connected communities."[10] For example, a report commissioned by the U.S. Chamber of Commerce found that broadband-enabled technologies are positively effecting a development of a new, learner-centric education paradigm.[11] The report stated that broadband has the greatest potential to be the most influential as a transformative solution for education in the United States.[12] Yet, the study found that "only 56 percent of African-Americans and 45 percent of households with incomes under $30,00 have adopted broadband by early 2010, compared to 66 percent of all

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2 John B. Horrigan & Maeve Dugagn, Home Broadband 2015, Pew Research Center 1 (Dec. 21, 2015), http://www.pewinternet.org/2015/12/21/home-broadband-2015/.

3 Id.

4 Id.

5 Id.

6 Id.

7 Horrigan & Dugagn supra note 2.

8 Office of the Press Secretary, Fact Sheet: President Obama Announces ConnectALL Initiative, The White House (Mar. 9, 2016), https://obamawhitehouse.archives.gov/the-press-office/2016/03/09/fact-sheet-president-obama-announces-connectall-initiative.

9 Id.

10 Id.

11 Charles M. Davidson & Michael J. Santorelli, The Impact of Broadband on Education, 4 (2010), https://www.uschamber.com/sites/default/files/legacy/about/US_Chamber_Paper_on_Broadband_and_Education.pdf.

12 Id. at 1.

adults."[13]

The "Connecting America" initiative found that families earning under $25,000 a year are about half as likely to have the Internet at home in comparison to families that are the most well-off.[14] For example, 36% of households below the poverty line did not have Internet access in New York City in 2015.[15] Furthermore, approximately "2.5 million Housing Units in New York have either limited or no access to high-speed internet."[16] It was this staggering number that lead New York City Mayor de Blasio to invest ten million dollars to offer free broadband to residents in five public housing developments throughout the city in July of 2015. "No child should worry about whether or not she can finish her homework because her family can't afford broadband at home" stated Maya Wiley, Counsel to the Mayor, in support of the initiative.[17] New York's Governor Andrew Cuomo has also granted a $500 million investment into a new broadband program to provide access for high-speed Internet access to unserved and underserved areas across the state.[18]

The issue of broadband connectivity is not just a focus for the public sector, but many private organizations are also attempting to address this gap within broadband connectivity. For instance, Facebook is in communication with U.S. government officials and wireless carriers regarding its implementation of a program called "Free Basics."[19] "Free Basics" would target low-income and rural Americans who are unable to afford reliable high-speed Internet by allowing users to stretch their data plans by offering free internet access to resources such as online news, health information, and job leads.[20]

These are just examples of the consensus that American's ability to access broadband is a major concern for all. These concerns are what prompted the federal government to attempt to regulate broadband through the Federal Communications Commission ("FCC").[21] The FCC stated that America "needs more broadband, better broadband, and open broadband networks" within its 2015 Open Internet Order.[22] This order developed five open Internet rules and reclassified broadband Internet as a common carrier under the Telecommunications Act of 1996.[23] This was a dramatic change in the agencies historical approach to the regulation of broadband.[24] Historically,

13 Id. at 16.
14 Supra note 8.
15 Mayor de Blasio Announces up to $10 Million Investment in Free Broadband Service for Five NYCHA Developments, Off. of the Mayor of New York City (July 16, 2015), http://www1.nyc.gov/office-of-the-mayor/news/491-15/mayor-de-blasio-up-10-million-investment-free-broadband-service-five-nycha#/0.
16 See Broadband Program Office, https://nysbroadband.ny.gov/ (last visited May 1, 2018).
17 Id.
18 Governor Cuomo Launches #Broadband4All Campaign Rallying Support for New NY Broadband Program, Governor's Press Off. (March. 18, 2015), https://www.governor.ny.gov/news/governor-cuomo-launches-broadband4all-campaign-rallying-support-new-ny-broadband-program.
19 Id.
20 Id.
21 Protecting & Promoting the Open Internet, 30 FCC Rcd. 5601 (2015) [hereinafter Open Internet Order]
22 Id.
23 Id. at 5610.
24 Charles M. Davidson & Michael J. Santorelli, Broadband, The States, and Section 706: Regulatory Federalism in the Open Internet Era, 8:2 Hastings Sci. & Tech. l. j. 211, 211 (2016) [hereinafter Regulatory Federalism]

broadband services were regulated minimally to allow for innovation and competition.[25] Further, the power to regulate was left heavily in the hands of the federal government through the FCC.[26]

With such a dramatic change in regulation, there are many uncertainties as to what powers individual tates have when regulating broadband within their borders. The recent reclassification of broadband as a telecommunications service looks to empower the states with regulatory powers.[27] The Telecommunications Act of 1996 itself states under section 706(a):

> "The Commission *and each State commission* with regulatory jurisdiction over telecommunications service shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms) by utilizing, in a manner consistent with public interest, convenience, and necessity, price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment."[28]

The New York Public Service Commission ("NY PSC") argues that this section does not intent to preempt state actions that seek to accomplish this important federal goal, so long as it does not conflict with the federal scheme.[29] The New York Legislature provided the NY PSC with general and broad oversight authority over telecommunications and cable providers through the Public Service Law.[30]

Yet, it appears that the progress the Federal Communications Commission has made in regulating broadband internet services might drastically alter in the future. This is due to the results of the 2016 Presidential Election and its consequences. Newly elected President Donald Trump has been outspoken in his criticism of the FCC's net neutrality regulation.[31] Mark Jamison, a member of Trump's Tech Transition Team, concluded that there little need for the agency to exist.[32] Republicans, with control of the federal government, are expected to roll back many of the FCC's policies on net neutrality.[33] The Trump administration believes that you can leave much of the regulation powers that has been invested in the FCC to the state governments.[34]

This paper will access the parameters about the relationship between federal

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25 Id. at 216
26 Id.
27 Id. at 214.
28 Telecommunications Act of 1996, 47 U.S.C. § 1302(a)(2017)(emphasis added).
29 Altice N.V., 15-M-0647 (2016), 2016 WL 3386592.
30 Id.
31 Brian Fung, 'We don't need the FCC': A Trump adviser's proposal to dissolve America's telecom watchdog, Wash. Post (Nov. 22, 2016), https://www.washingtonpost.com/news/the-switch/wp/2016/11/22/we-dont-need-the-fcc-a-trump-advisers-proposal-to-dissolve-americas-telecom-watchdog/.
32 Id.
33 Id.
34 Id.

law, broadband, and the State of New York. Currently, the FCC will preempt state public utility commissions ("PUCs") on a case-by-case basis that are inconsistent with the federal scheme.[35] Some will argue that the best course for individual states looking to improve broadband would be leverage the ample array of non-regulatory resources.[36] But, this paper will show that New York has already started to use its general powers to regulate broadband. Finally, we will view how the current political landscape will affect New York's regulation scheme for broadband.

The paper proceeds as follows:

Section 2 provides context for discussion of the current approach that Federal Communications Commission has taken for improving broadband connectivity. This will examine the historical context of how the Federal Communications Commission has regulated broadband. This section concludes that the FCC does authorize state governments to assist with the deployment of broadband internet.

Section 3 asses the contours of federal regulation powers and its effect on PUCs. Specifically, we will assess the 2015 Open Internet and the recent District of Columbia's Court of Appeals decision to uphold the FCC's reclassification of broadband as a telecommunications service. Furthermore, this paper will consider recent FCC regulations against individual states to attempt to grasp what exactly constitutes the "federal scheme." Finally, once understand what the "federal scheme" consist of, we can understand the powers granted to the New York Public Service Commission.

Section 4 provides the path that New York has chosen to regulate broadband and whether the FCC will use its preemption powers against the NY PSC. Furthermore, we will assess whether New York should continue to regulate broadband in the manner it has chosen? Why should New York regulate broadband instead of allowing the FCC complete power within New York Borders? Finally, should New York change its policies on regulating broadband?

Section 5 access the possible future landscape of broadband regulation in the wake of the 2016 United States Presidential Election. Specifically, how President-elect Donald Trump and his administration's views upon net neutrality might affect the already unsettled area of the law.

II. Broadband Regulations at the Federal Level

a. Congressional Legislation

The United States Congress began to regulate communication services with the Communications Act of 1934.[37] Congress authorized the regulation of

35 Open Internet Order, supra note 21, at 5804.
36 Charles M. Davidson & Michael J. Santorelli, supra note 24, at 214.
37 Communications Act of 1934, 47 U.S.C. § 151 (2017).

"communications by wire and radio" to prohibit discrimination based on "race, color, religion, national origin, sex."[38] Its overall purpose was to ensure a "rapid" and "efficient" national network of wire and radio communications with "adequate facilities at reasonable charges."[39] It granted plenary power to create the Federal Communications Commission, and ensure that these policies are used to "promote national defense and safety of life and property."[40] The Federal Communications Commission ("FCC") has derived its powers from the Communications Act.

The FCC inquired into its regulatory jurisdiction over the newly developed computers in the 1950's.[41] The outcome was the first regulatory scheme for computers, within the Computer II Order.[42] Over the years the FCC continued to implement small regulations onto this new technology.[43] But as access to personal computers and the Internet grew exponentially, Congress was again tasked with developing legislation upon adequate access to these services.[44]

Congress borrowed heavily from the Computer II framework to enact the Telecommunications Act of 1996, which amended the Communications Act.[45] The Telecommunications Act subjects telecommunications service's to common carrier regulations.[46] A telecommunications service is defined as "the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of facilities used."[47] Telecommunication Services subject to common carrier regulations, for example, must charge just and reasonable rates, design their systems to allow other carriers access to interconnect with their systems, and contribute to a federal "universal service fund."[48]

In contrast, an "information service" is not subject to common carrier regulation.[49] An "information service" is defined as the "offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications."[50] Under the act, the "appropriate regulatory treatment therefore turns on what services a provider offers to the public: if it offers telecommunications, that service is subject to Title II regulation."[51]

Congress created a third category for information services known as the "telecommunications management exception."[52] Congress exempted any use of an

38 Id.
39 Id.
40 Id.
41 U.S. Telecom. Assoc., v. FCC, 825 F.3d 674, 691 (D.C. Cir. 2016).
42 Amendment of Section 64.702 of Commission's Rules and Regulations, 77 F.C.C.2d 384, 420 (1980).
43 U.S. Telecom, 825 F.3d at 691-95.
44 Id.
45 Id. at 691.
46 47 U.S.C. § 153 (2017).
47 U.S. Telecom, 825 F.3d at 691.
48 Nat'l Cable & Telecomms.' v. Brand X Internet Servs.', 545 U.S. 967, 976 (2005).
49 Id.
50 Supra note 46.
51 U.S. Telecom. Assoc., v. FCC, 825 F.3d 674, 691 (D.C. Cir. 2016).
52 Id.

information service "for the management, control, or operation of a telecommunications system or the management of a telecommunications service."[53] The act treats this category of information services as a telecommunications service and subject to Title II.[54]

The Federal Communications Commission uses the Telecommunications Act and Communications Act as its main weapon to regulate broadband services. It first applied these statutes to broadband in 1998 when it classified broadband internet services furnished over telephone lines (DSL) as a telecommunications service.[55] By contrast, it classified cable modem service as solely an information service four years later.[56] The FCC stated that cable broadband transmission functioned as a ""single, integrated information service," rather than a standalone offering" and, therefore, an information service.[57] This regulation was deemed a permissible interpretation of the Telecommunications Act by the Supreme Court in *National Cable & Telecommunications Ass'n v. Brand X Internet Services*.[58]

Following *Brand X*, the FCC classified DSL and mobile broadband services as integrated offers of information services in their 2005 Wireline Broadband Order and the 2007 Wireless Order.[59] The 2005 Wireline Broadband Order made it clear that, even though it's classification did not obligate common carrier regulations, it would nonetheless seek to preserve principles of Internet openness.[60]

The Commission began to use its powers to enforce the idea of an open Internet in 2007 when the FCC acted against Comcast Corporation.[61] Customers of Comcast accused the company of interfering with their ability to access certain applications.[62] The D.C. Circuit Court of Appeals vacated the 2007 Wireline Broadband Order because the FCC failed to identify any grant of statutory authority.[63]

Following *Comcast*, the FCC adopted the 2010 Open Internet Order.[64] In that order, the "Commission promulgated three rules: (1) a transparency rule, which required broadband providers to "disclose the network management practices, performance characteristics, and terms and conditions of their broadband services";

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53 Supra note 46.
54 Id.
55 Deployment of Wireline Services Offering Advanced Telecommunications Capability [hereinafter Advanced Services Order], 13 FCC Rcd. 24, 012, 24, 014 ¶ 3, 24, 029-30 ¶¶ 35-36 (1998).
56 In re Inquiry Concerning High-Speed Access to the Internet over Cable and Other Facilities[hereinafter Cable Broadband Order], 17 FCC Rcd. 4798, 4823 ¶¶ 39-40 (2002).
57 U.S. Telecom. Assoc., v. FCC, 825 F.3d 674, 692 (D.C. Cir. 2016) (quoting In Re Inquiry Concerning High-Speed Access to the Internet over Cable and Other Facilities, 17 FCC Rcd. 4798, 4823 ¶¶ 39-40 (2002)).
58 Nat'l Cable & Telecomms.' v. Brand X Internet Serv., 545 U.S. 967, 972 (2005).
59 In re Appropriate Regulatory Treatment for Broadband Access to the Internet over Wireless Networks ("2007 Wireless Order"), 22 FCC Rcd. 5901, 5901-02 ¶ 1 (2007)[hereinafter Mobile Broadband]; In Re Appropriate Framework for Broadband Access to the Internet over Wireline Facilities [hereinafter 2005 Wireline Broadband Order], 20 FCC Rcd. 14, 853, 14, 863-64 ¶ 14 (2005).
60 In re Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, 20 FCC Rcd. 14, 853, 14, 863-64 ¶ 14 (2005).
61 Comcast v. FCC, 600 F.3d 642, 644 (D.C. Cir 2010).
62 Comcast, 600 F.3d at 644.
63 Id.
64 U.S. Telecom. Assoc., v. FCC, 825 F.3d 674, 693 (D.C. Cir. 2016).

(2) an anti-blocking rule, which prohibited broadband providers from "blocking lawful content, applications, services, or nonharmful devices"; and (3) an anti-discrimination rule, which established that broadband providers "may not unreasonably discriminate in transmitting lawful network traffic."[65] The FCC relied on section 706 of the Telecommunications Act to support these rules, which states that the FCC should "encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans."[66]

The 2010 Open Internet Order came under attack in *Verizon v. FCC* in 2014.[67] The D.C. Court of Appeals held that Section 706 of the Telecommunications Act of 1995 did give the FCC authority to enact open internet rules.[68] But, the court vacated the anti-blocking and anti-discrimination provisions because the FCC had chosen to classify broadband service as an information services under the Communications Act of 1934.[69] It appeared that this decision guided the future decisions of the FCC and its current regulation scheme.

b. Current Federal Regulation Scheme

Considered one of the most aggressive federal regulations upon broadband, the "2015 Open Internet Order" came in the wake of *Verizon.* The order's main component is the reclassification of broadband internet as a "telecommunications service" under the Telecommunications Act of 1996.[70] The Commission also carried out its statutory mandate to not apply any regulation or provision that the FCC determines unnecessary to guarantee just and reasonable service, protect consumers, or is consistent with public interest under the Communications Act of 1996.[71]

The 2015 Open Internet Order also promulgated five open internet rules that applied to both fixed and mobile broadband service. Fixed broadband providers are those who furnish residential broadband services.[72] In contrast, mobile broadband providers are those who serve end users primarily using mobile stations (i.e. smart phones).[73] Three of the rules are self-proclaimed bright-line rules to ban blocking, throttling, and paid prioritization.[74] The anti-blocking provision does not allow an entity to block "lawful content, applications, services, or nonharmful devices, subject to reasonable network management."[75] Anti-throttling denies entities from impairing or degrading lawful internet traffic on the basis of "Internet content, application, or service, or use of a non-harmful device, subject to reasonable network management."[76] The final

65 Id. (quoting In Re Framework for Broadband Internet Service, 25 FCC Rcd. 7866, 7867 ¶ 2 (2010).
66 US Telecomm., 825 F.3d at 693 (quoting 47 U.S.C. § 1302(a)).
67 See Verizon v. FCC 740 F.3d 623 (D.C. Cir. 2014).
68 Id.
69 Id.
70 Open Internet Order, supra note 21, at 5743-44 ¶ 331.
71 47 U.S.C. § 160(a).
72 Verizon v. FCC, 740 F.3d 623, 633 (D.C. Cir. 2014).
73 Id.
74 Open Internet Order, supra note 21 at 5647 ¶ 110.
75 Id. at 5648 ¶ 112.
76 Id. at 5651 ¶ 119.

bright-line rule prohibits paid prioritization, which is when a broadband provider favors "some traffic over other traffic."[77]

The fourth rule, known as the "General Conduct Rule," prohibits the unreasonable interference or disadvantage "end user's ability to select, access and use" broadband or "edge providers' ability to make lawful content, applications, services, or devices available to end users."[78] Finally, the FCC promulgated an "enhanced transparency rule."[79] This rule requires broadband providers to publicly disclose accurate information about "network management practices, performance, and commercial terms" of its services.[80]

One of the most influential pieces of this order pertaining to individual states is the FCC's plan to regulate and enforce. The commission gave a series of factors to guide broadband providers, as well as state entities, to properly follow the 2015 Open Internet Order.[81] Those factors are as follows:

1. *End-User Control*: "A Practice that allows end-user control and is consistent with promoting consumer choice is less likely to unreasonably interfere or cause an unreasonable disadvantage the end user's ability to use the Internet as he or she sees fit."[82]

2. *Competitive Effects*: "Practices that have anti-competitive effects in the market for applications, services, content, or devices would likely unreasonably interfere with or unreasonably disadvantage edge providers' ability to reach consumers in ways that would have a dampening effect on innovation, interrupting the virtuous cycle."[83]

3. *Consumer Protection*: "The no-unreasonable interference/disadvantage standard is intended to serve as a strong consumer protection standard."[84]

4. *Effect on Innovation, Investment, or Broadband Deployment*: "Internet openness drives a "virtuous cycle" in which innovations at the edges of the network enhance consumer demand, leading to expanded investments in broadband infrastructure that, in turn, spark new innovations at the edge."[85]

77 Id. at 5653 ¶ 125.
78 Id. at 5660 ¶ 136
79 Id. at 5669-82 ¶¶ 154-85.
80 Open Internet Order, supra note 21, at 5647 ¶ 110.
81 Id.
82 Id. at 5661 ¶ 139.
83 Id. at 5662 ¶ 140.
84 Id. at 5662 ¶ 141.
85 Id. at 5663 ¶ 142.

5. *Free Expression*: "Practices that threaten the use of the Internet as a platform for free expression would likely unreasonably interfere with or unreasonably disadvantage consumers' and edge providers' ability to use BIAS to communicate with each other, thereby cause harm to that ability."[86]

6. *Application Agnostic (or use-agnostic)*: These practices "likely do not cause an unreasonable interference or an unreasonable disadvantage to end users' or edge providers ability to use BIAS to communicate with each other."[87]

7. *Standard Practices*: "In evaluating whether a practice violates our no-unreasonable interference/disadvantage standard to protect Internet openness, we will consider whether a practice conforms to best practices and technical standards adopted by open, broadly representative, and independent Internet engineering, governance initiatives, or standards-setting organization." [88]

These factors have served as a guide for navigating the 2015 Open Internet Order. The FCC plans on regulating those who violate the Order on a "case-by-case" basis.[89] There have been very few FCC decisions where it utilized this power to regulate, therefore giving state entities a very limited understanding of how these factors apply in the real world.

This idea of a "case-by-case" basis is also referred to as "conflict preemption." Conflict preemption occurs when a state law or regulation is inconsistent with a federal law or regulation, and the federal regulation prevails under the Supremacy Clause.[90] In fact, States cannot "conflict or interfere with, curtail or complement, the federal law, or enforce additional or auxiliary regulations."[91] Another form of conflict preemption is when "compliance with both federal and state regulations is a physical impossibility."[92] Conflict preemption will depend on the proper identification of an "actual" conflict.[93] The existence of a hypothetical or potential conflict is insufficient to warrant preemption of the state statute.[94]

The problem with conflict preemption is that it leaves very little guidance to state entities and businesses on what falls inside the scope of the federal regulation. Many times, it takes an agency to regulate against multiple actors for states to get a firm grasp of the federal agencies intentions. More importantly, PUCs must navigate in

86 Open Internet Order, supra note 21, at 5663 ¶ 143.
87 Id. at 5663 ¶ 144.
88 Id. at 5664 ¶ 145.
89 Id. at 5663 ¶ 138.
90 See Hines v. Davidowitz, 312 U.S. 52 (1941).
91 Id.
92 See Florida Lime & Avocado Growers, Inc. v. Paul, 373 U.S. 132 (1963).
93 Amanda G. Lewis, Federal Preemption of State and Local Laws: State and Local Efforts to Impose Sanctions on Employers of Unauthorized Aliens, Colum. (Feb. 12th, 2017), http://www.law.columbia.edu/sites/default/files/microsites/career-services/Federal%20Preemption%20of%20State%20and%20Local%20Laws.pdf.
94 Id.

uncharted water until more clarity is given by the federal agency. Sadly, the FCC has only enforced the 2015 Open Internet Order less than a handful of times. This leaves PUC's with very limited knowledge on what falls inside and out of the 2015 Open Internet Order's scope.

Many broadband companies did not approve of the 2015 Open Internet Order. Moreover, these companies did not approve of the reclassification of broadband. Several groups of petitioners challenged the interpretation of the 2015 Open Internet Order under the Telecommunications Act in the D.C. Federal Circuit within *U.S. Telecommunications Association v. FCC* .[95] The District Court upheld the agencies interpretation of the Communications Act and Telecommunications Act.[96]

U.S. Telecommunications Association appealed the decision to the District of Columbia Court of Appeals, arguing that the Federal Communications Commission did not properly interpret the Telecommunications Act when it reclassified broadband as a "telecommunications service."[97] The court turned to *Chevron* doctrine, which sets forth the doctrine to determine whether the Federal Communications Commission lacked the statutory authority to reclassify broadband.[98] In the first step of *Chevron*, the court will ask whether Congress has directed the agency to conduct itself in the manner that it has.[99] If the answer is yes, then that is the end of the evaluation.[100] But if the statute is "silent or ambiguous" as to the agencies conduct, then the court must ask "whether the agency's answer is based on a permissible construction of the underlying statute."[101]

The D.C. Court of Appeals already decided that the Communications Act was ambiguous as to the proper classification in broadband in *Brand X*.[102] Therefore, the court turned to step two of *Chevron* to see whether reclassifying broadband as a "telecommunications service" is a permissible interpretation of the Communications Act.[103] The court determined that the 2015 Open Internet Order was a reasonable and permissible interpretation of the Telecommunications Act of 1996.[104]

Furthermore, U.S. Telecomm argued that the Federal Communications Commission did not adequately explain why it choose to reclassify broadband as a "telecommunications service" after many years of classification as an "information service."[105] The Administrative Procedures Act ("APA") mandates agencies to regulate with reasoned decision-making and demands an agency explain its reasoning for a change in interpretation.[106] The court found that the FCC had adequately explained its

95 U.S. Telecom. Assoc., v. FCC, 825 F.3d 674, 689 (D.C. Cir. 2016).
96 Id.
97 Id.
98 Id. at 692.
99 Chevron, U.S.A., Inc. v. Natural Resources Def. Council, Inc., 467 U.S. 837, 842 (1984).
100 Id.
101 U.S. Telecomm. Ass'n., 825 F.3d at 832.
102 Nat'l Cable & Telecomms.' v. Brand X Internet Servs.', 545 U.S. 967, 987 (2005).
103 U.S. Telecomm. Ass'n, 825 F.3d at 841.
104 Id.
105 Id. at 842.
106 Verizon v. FCC, 740 F.3d 623, 636 (D.C. Cir. 2014).

decision to reclassify broadband.[107] Therefore, the court upheld FCC's reclassification of broadband as a telecommunications service.

As of now, it appears that the 2015 Open Internet Order is constitutional and enforceable. To fully understand what is encompassed in the Order, we must look to cases where the FCC regulated against state actors or entities. Below, we will study three cases where the 2015 Open Internet Order was implemented to fully understand the powers of the FCC over broadband internet.

c. Recent Federal Communications Commission Orders

i. Charter Advanced Services (MN), LLC v. Heydinger

One of the first cases were the FCC enforced the 2015 Open Internet Order was in the summer of 2016. The Minnesota Public Utility Commission ("MPUC") issued an order that subjected Charter Advanced to certain regulations.[108] Charter Advanced provides fixed, interconnected Voice over Internet Protocol ("VoIP") service and contends that its service is not subject to state regulation as a "telecommunications services," but rather it is an "information service."[109] The MPUC rejected this position and Charter Advanced filed suit.[110] MPUC filed a motion to dismiss under the Federal Rules of Civil Procedure Rule 12(b)(6), which was referred to Federal Magistrate Judge Hildy Bowbeer.[111] Judge Bowbeer issued a Report and Recommendation, which determined Charter's VoIP service is an information service and dismissed the defendants motion.[112] The Court upheld, in part, the Report and Recommendation.[113]

The Court discussed and explained the idea of a "dual regulatory system" within the telecommunications field and compared it to the idea of a "scheme of cooperative federalism."[114] Sections 151 and 152(b) of the Telecommunications act authorizes the enactment of "a dual regulatory system" with respect to the countless matters addressed by federal telecommunications law.[115] The court argued that Congress enacted the FCC to regulate "interstate and foreign communication by wire" but did not grant them jurisdiction over "regulations or in connection with intrastate communication service of any carrier."[116] But, Congress has provided the FCC the power to preempt state-regulation of certain telecommunications.[117]

The court then discussed the "scheme of cooperative federalism," which describes a "compromise" between the states and federal governments as laid out in

107 5 U.S.C. § 706(2)(A)(2017).
108 Charter Advanced Services (MN), LLC v. Heydinger, 2016 WL 3661136, at *1 (D. Minn. 2016).
109 Id.
110 Id.
111 Id.
112 Id.
113 Id.
114 Charter Advanced Services (MN), LLC v. Heydinger, 2016 WL 3661136, at 2* (D. Minn 2016).
115 Id. (quoting Louisiana Pub. Serv. Comm'n v. F.C.C., 476 U.S. 355, 368-70 (1986).
116 Id.
117 Id.

Southwestern Bell Tel. Co. v. Connect Commc'ns Corp.[118] States PUC's may have the final say with purely state law issues, but federal courts can stop State PUC's who are not regulating in accordance with federal policy.[119] The Court declined to determine which theory applies to the case at hand, and determined that the FCC may preempt state regulation of "information services."[120]

ii. Tennessee v. Federal Communications Commission

The next time the FCC utilized its new regulatory powers was a couple of months later. Here, the FCC issued an order preempting Tennessee and North Carolina statutes that either forbid or restricted the expansion of municipality owned broadband services.[121] The municipalities in these states wanted to expand their own networks beyond their current territorial boundaries to underserved areas.[122] The FCC preempted the states statutes by citing to its statutory mandate to remove barriers to broadband services and to promote competition in the telecommunications market.[123] The 6th circuit reversed the order due to no clear statement in federal legislation that authorized the FCC for its actions.[124]

The Court argued that the FCC's decision to preempt the Tennessee and North Carolina statutes served as a to re-allocation of "decision making power that are inherently between the states and their municipalities."[125] Furthermore, the court stated that there is no federal statute or FCC regulation that "*requires* the municipalities to expand or otherwise to act in contravention of the preempted state statutory provisions."[126]

The FCC relied on section 706 of the Telecommunications Act of 1996, but the court argued that it falls short of such a clear statement.[127] The Court said that cases 706(a) "instructs the FCC to utilize "measures that promote competition in the local telecommunications market, or other regulating methods that removes barriers to infrastructure investment."[128] Furthermore, section 706(b) directs the FCC to also remove barriers to infrastructure investment and "promote competition in the telecommunications market."[129] The court argued that the terminology to "remove barriers to infrastructure investment" is unclear as to whether it applies to both public and private structures or to only private.[130] Moreover, the court stated that nowhere in cases 706 is there a clear directive to "promote competition in the telecommunications market" by "preempting a state's allocation of powers between itself and its

118 Id. (quoting Raney v. Fed. Bureau of Prisons 222 F.3d 942, 948 (8th Cir. 2000)).
119 Id.
120 Charter Advanced Services (MN), LLC v. Heydinger, 2016 WL 3661136, at 2* (D. Minn. 2016).
121 Tennessee v. FCC, 832 F.3d 597, 599 (6th Cir. 2016).
122 Id.
123 Id.
124 Id.
125 Id.
126 Id.
127 Tennessee v. FCC, 832 F.3d 597, 599 (6th Cir. 2016).
128 Id. at 613 (quoting 47 U.S.C. § 1302(a)).
129 Id. at 613 (quoting 47 U.S.C. § 1302(b)).
130 Id. at 613.

subdivisions.[131] To support its argument, the court stated that authority to preempt requires a clear statement by a federal statute.[132]

Even though this case only directly implicates North Carolina and Tennessee, it appears that federal courts are unlikely to find that the FCC has the legal authority to preempt state laws that restrict the growth of broadband networks.[133] It appears that states who have legislation that curbs municipal broadband expansion efforts are not subject to FCC regulation.[134] Furthermore, the FCC does not plan to appeal the federal court's decision.[135] Municipalities that want to keep expanding their municipal broadband networks have to fight their own state legislatures, instead of looking to the FCC for assistance.[136]

iii. Federal Trade Commission v. AT & T Mobility LLC

One interesting consequence of the FCC's reclassification of broadband as a common carrier is the rippling effect of regulations within other federal agencies. The Federal Trade Commission ("FTC") brought action against AT&T for violating a provision of the Federal Trade Commission Act ("FTC Act") that prohibits unfair or deceptive acts or practices.[137] The FTC had issue with "the adequacy of AT & T's disclosures regarding its data throttling program.[138] That section exempts "common carriers subject to the Acts to regulate commerce…from using..unfair or deceptive acts or practices in or affecting commerce."[139]

The issue before the court was whether this exception is status based or is activity based?[140] Status-based would conclude that an entity is exempt from regulation as long as it has the status of a common carrier.[141] An activity-based exception would encompass only those entities whose activity is a common carrier activity.[142] The court looked to the language and structure of the FTC Act to answer the question.[143] The 9th Circuit concluded that the common carrier exception in section 5 is status-based, which meant that AT&T Mobility LLC was exempt from section 5.[144]

131 Id.
132 Id.
133 Cecilia Kang, Broadband Law Could Force Rural Residents Off Information Superhighway, N.Y. Times (Feb. 9th, 2016, 3:30 PM), https://www.nytimes.com/2016/08/29/technology/broadband-law-could-force-rural-residents-off-information-superhighway.html?_r=1
134 Id.
135 Id.
136 Id.
137 FCC v. AT & T Mobility, LLC., 835 F.3d 993, 995 (9th Cir. 2016)
138 Id.
139 Id. (quoting 15 U.S.C. § 45(a)(2)).
140 Id. at 997.
141 Id.
142 Id.
143 AT & T Mobility LLC., 835 F.3d at 997.
144 Id.

III. New York and Broadband

a. Background History

One of the first exercises of regulatory power over broadband and internet services in New York occurred in 1994.[145] The New York Public Service Commission ("NY PSC") initiated its Competition II proceeding, which gave four core principles it would follow with telecommunications.[146] Those principles are: 1) ensuring quality telecommunications services at reasonable rates; 2) allowing competition to be the most effective means to that goal, if feasible; 3) "recognizing that regulation should reflect market conditions"; and 4) "acknowledging that providers in like circumstances should be subject to like regulation."[147]

It was another twelve years till the NY PSC embarked on another review of the telecommunications market with its Competition III proceeding, occurring in 2006.[148] It was here that NY PSC determined that a lightened regulatory approach was necessary to ensure fair competition.[149] But, it did require incumbent telephone carriers to offer "basic service" to a regulated price cap with few exceptions.[150] The NY PSC also began to enforce service quality performance standards "for areas that were not subject to adequate competition and for more vulnerable consumers."[151] It followed these basic principles with little variance over the next two decades.[152] But, it appears that this trend began to change when Anthony Cuomo was elected as Governor of New York in 2011.

a. New York's Gov. Cuomo Initiative

The State of New York ranks number one in the nation for broadband activity and investment, according to New York Governor Anthony Cuomo's "Broadband for All" initiative website.[153] "Broadband for All" is a statewide initiative to "close the broadband gap."[154] This gap is created by the fact that "millions of New Yorkers are either limited to target broadband speeds or have no access to broadband at all."[155] This makes it difficult for New Yorkers who have inadequate access to broadband from participating in the global economy.[156] According to the site, every New Yorker will have access to high-speed internet by 2018.[157]

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145 In Re Study on the State of Telecommunications in New York State, 2015 WL 3932169 *3 (June 23, 2015).
146 Id.
147 Id.
148 Id. at 4.
149 Id.
150 Id.
151 In Re Study on the State of Telecommunications in New York State, 2015 WL 3932169 *3 (June 23, 2015).
152 Id.
153 Broadband for All Program, New York State, (Feb. 12, 2017), https://www.ny.gov/programs/broadband-all.
154 Id.
155 Id.
156 Id.
157 Id.

Governor Cuomo plans on achieving this goal by matching private-sector investments, which will provide 50% of the capital needed.[158] The $500 million investment from the State will "serve to stimulate competition in the broadband market where none or little exists" and improve "affordability and quality of service."[159] Governor Cuomo also wishes to have broadband providers set Internet access rates of at least 100 Mbps, which is unprecedented.[160] Finally, the Governor also plans to have local input to guide the development.[161] According to the website, each Regional Economic Development Council ("REDC") will submit a comprehensive plan that: 1) identifies underserved and unserved areas; 2) aggregates demand across all sectors; 3) develop the most cost-effective means to provide access; and 4) leverage state-owned assets where possible.[162]

b. Current Landscape in wake of FCC's 2015 Open Internet Order

To complete this initiative, Governor Cuomo and the New York Public Service commission must tread carefully through the current federal policy regarding broadband regulation and deployment. In a recent order, the NY PSC staff acknowledged the FCC's recent reclassification of broadband as a telecommunications service "subject to common carrier regulation under Title II" but that the FCC "opted to forbear from many Title II regulations, most notably rate regulation."[163] Yet, "Staff states that the FCC's reclassification does nothing to undermine, and, in fact, provides further support to, Section 706 of the Act, which seeks to remove barriers to broadband investment, deployment and competition."[164] NY PSC staff acknowledge that section 706 is not intended to preempt state actions that seeks to accomplish this goal, so long as "such action does not conflict with federal policies or regulations."[165] Furthermore, Staff stated that is "essential" to "look at the broadband market" because these "communications" services are "often provisioned over the same network that consumers consider increasingly essential in a digital society."[166]

The NY York Staff cites to the New York Public Service Law ("PSL") as providing general and broad oversite authority to the NY PSC over telecommunications.[167] Specifically, the NY PSC cited:

- "PSL § 91: adequate telephone service at just and reasonable rights
- PSL § 94: general powers of the Commission over telecommunications providers to examine conditions of service and facilities

158 Id.
159 Broadband for All Program, New York State, (Feb. 12, 2017), https://www.ny.gov/programs/broadband-all.
160 Id.
161 Id.
162 Id.
163 Joint Petition of Altice N.V. and Cablevision Systems Corporation et al at 3, 2016 WL 3386592 (2016).
164 Id.
165 Id.
166 Id.
167 Id.

- PSL § 211: general powers of the Commission to set State communications policy and ensure cable companies provide adequate, economical, and efficient service to subscribers."[168]

These statutory provisions give the PSC the authority needed to be the driving force behind Governor Cuomo's initiative. NY PSC also believes that the expansion of broadband services to underserved areas is "an important Commission goal, especially in light of" the FCC's 2015 Open Internet Order.[169]

There are still many questions left unanswered in this ever-evolving regulation scheme develops. It appears that, due to Federal policy, state PUCs will be unable to regulate rates of broadband providers. But, state PUC's can assist in broadband deployment. As of right now, it appears that states with similar broadband initiatives to Governor Cuomo's are likely to escape preemption from the current Federal Administration.

Interestingly, the cases were the FCC has attempted to preempt state law was when the state legislature has attempt to restrict municipality initiatives to regulate broadband.[170] In comparison, New York wishes to assist the improvement of broadband connectivity through its "Broadband For All" initiative.[171] Furthermore, as mentioned before, the NY PSC wishes to "remove barriers" that prohibit the deployment and investment of broadband to underserved areas of the state, which is the opposite of the situation that occurred in North Carolina and Tennessee.[172]

IV. President Donald Trump and his effect on the Federal Communications Commission

Policy changes are bound to occur anytime there is an administration change in the executive branch of the United States Government. This is even more evident when the new administration is a political adversary of the old. Yet, it feels as if President Donald Trump will either adjust, weaken, or outright replace many of the policies and initiatives that President Barack Obama developed over his eight-year tenure as President of the United States. Even though President Trump has not released his exact plans for the regulation of broadband internet, he has expressed staunch opposition to net-neutrality on twitter in November of 2014 by calling it "an attack on the internet" and "will target conservative media."[173] President Trump is not the only one who has issues with an open internet, internet providers like Comcast, AT&T, and Verizon have opposed net neutrality from the very beginning.[174] Even Dish CEO Chris Ergen stated

168 Id.
169 Joint Petition of Middleburgh Telephone Company et al 99-101, 2016 WL 4129244 (2016).
170 See Tennessee, supra note 127.
171 See Broadband for All, supra note 153.
172 See Joint Petition, supra footnote 163.
173 Jeff Dunn, It looks like we're going to have a less open internet under Donald Trump, Bus. Insider (Feb. 12, 2017 at 7:15 PM), http://www.businessinsider.com/donald-trump-fcc-net-neutrality-zero-rating-policy-future-2016-11.
174 Shelby Carpenter, Here's What The Trump Presidency Will Mean For Net Neutrality, Forbes (Feb.

that he expected President Trump to challenge or at least weaken net neutrality.[175]

President Trump named Ajit Pai as new chairmen of the Federal Communications Commission.[176] Pai was nominated by President Obama as a senior Republican party commissioner in 2012.[177] He will be able to stay in the position through 2017 as the chairmen, but will eventually need to be reconfirmed by the Senate.[178] Pai is an outspoken opponent to net neutrality, and made a statement in December of 2016 vowing to "revisit" net neutrality rules "as soon as possible."[179] This letter stated that pro-consumer practices are going to be under scrutiny because they prevent things like pay-for-priority access. Furthermore, Pai stated that the 2015 Order's blocking and throttling rules are "unjustified burdens" for service providers.[180] It does not appear that Pai is an opponent of the concept "net neutrality," but an opponent of the reclassification of broadband to a "telecommunications service."[181] Under Pai, it appears that the biggest components of the 2015 Order that would be under attack are the "zero rating" and "paid prioritization."[182]

Nevertheless, the FCC's first action under Ajit Pai was to direct up to $170 million in federal funding to help ease the digital divide in New York State.[183] Ironically, the investment is said to further President Obama's "Connect America Program."[184] Pai reiterated that "broadband is critical to economic opportunity and job creation." Pai said that this is his first step to fulfill his "promise to empower Americans with online opportunities."[185] The federal funds will be combined with another $200 million in state and private funds, which the "New NY Broadband Program" will oversee distributing the funds and insuring oversight.[186]

V. Conclusion

What does this mean for New York? Well, luckily for New Yorker's, their state government is committed to ensuring a fair and competitive broadband market. New York has initiatives that are in line with federal programs to ensure the expansion of broadband networks to underserved areas. Furthermore, both federal and state statutes authorize the New York government to assist with this deployment. The Trump administration appears to have the mindset of deregulation and giving more power

12, 7:15 PM), http://www.forbes.com/sites/shelbycarpenter/2016/11/10/heres-what-trump-presidency-will-mean-net-neutrality/#6da7bf0c1b15.

175 Id.

176 Nathan Ingraham, Ajit Pai Confirmed as the new head of the FCC, Engadget (Feb. 9, 2017, 2:15 PM), https://www.engadget.com/2017/01/23/ajit-pai-confirmed-as-new-head-of-the-fcc/.

177 Id.

178 Id.

179 Id.

180 Id.

181 Mike Orcutt, What Happens If Net Neutrality Goes Away?, MIT Tech. Rev. (Jan. 20, 2017, 5:00 PM), https://www.technologyreview.com/s/603432/what-happens-if-net-neutrality-goes-away/.

182 Id.

183 Andrew Dalton, FCC Approves $170 Million for New York Broadband rollout, Engadget (Feb. 9th, 2016, 3:10 PM), https://www.engadget.com/2017/01/26/fcc-approves-new-york-state-broadband-rollout/.

184 Id.

185 Id.

186 Id.

back to the state actors. For citizens in states such as North Carolina or Tennessee, this could raise some concern. But citizens of New York can rest assured, knowing that their government is committed to the idea of net-neutrality.

Intellectual Property and Public Health in the Developing World

Reviewed by Annie Millar

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Relevant Legal and Academic Areas: Intellectual Property Law, Patent Law, International Relations, Pharmaceutical Patents, the Agreement on Trade-Related Aspects of Intellectual Property (TRIPS), the World Trade Organization (WTO), the Doha Declaration

Summary: *Intellectual Property and Public Health in the Developing World* demonstrates how the desire for patent protection and strong intellectual property laws affects developing countries and least developed countries. Azam delves into the effects TRIPS has on countries without the infrastructure or resources to truly implement a patent regime that both gives strong rights to patent holders, while maintaining public health needs. By evaluating how four countries have altered their patent laws to become TRIPS compliant, Azam utilizes these countries as a guidepost to determine how other countries, specifically Bangladesh, can introduce pharmaceutical patents into their existing patent law, while still maintaining access to medicines.

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Introduction

Before 1995, countries were free to create patent laws as they saw fit. Then, the World Trade Organization (WTO) and the Agreement on Trade-related Aspects of Intellectual Property (TRIPS) set certain minimum standards for intellectual property laws. As a result, some countries have thrived from an increase in protection, while other countries struggle to strike a balance between protection and public health. With pharmaceutical patents at the forefront, they have proven to be an area of major contention. The TRIPS agreement demonstrates how countries in different situations view intellectual property law. The question boils down to two contradicting views; protection of invention and innovation versus protection of public health in regards to access to essential medications.

Background

The WTO and TRIPS

A multilateral trading system called the WTO provides a forum for dispute

resolution between member countries. All member countries are required to adjust their domestic laws to conform to minimum standards set by the WTO. TRIPS, as a part of the enactment of the WTO, set standards specifically for intellectual property protection. By setting minimum standards, TRIPS sought to eliminate discrimination in intellectual property rights. Generally, TRIPS covers patents, trademarks, trade secrets, copyright, and designs, and gives the WTO authority to settle disputes.

The Intellectual Property Rights Committee (IPC) pushed the TRIPS agreement, advocating for stronger laws to protect invention and innovation. The member countries of the IPC were big players in terms of power in the intellectual property world, such as the United States and several European countries. The agreement seemed to be a "brainchild of an industry coalition of developed nations." Essentially, the IPC had two main goals for pharmaceutical patent protection. First, they sought to eliminate unfair discrimination against the patenting of medications. Second, they aimed to delay the registration of generic equivalents as an extension of exclusion rights that patent protection ensures.

The arguments both for an against the minimum standards set forth by TRIPS demonstrated a clear divide between developed countries and least developed countries (LDCs). The big players argued for the standards, indicating the necessity to increase research and development (R&D) opportunities to foster innovation. On the other side of the coin were the LDCs. They argued that increasing R&D would not be feasible without the technical infrastructure, finances, and human resources required. The LDCs were worried that because of patent protection, drug prices would increase, the pharmaceutical sector would suffer, and access to medicine would decline. As a result, during the negotiation period the WTO introduced flexibilities to address issues put forth by LDCs.

TRIPS Flexibilities

The TRIPS agreement includes flexibilities in order to allow countries to implement the required changes, while still adhering to the needs of citizens and public health issues. Although helpful, the flexibilities are vague and disputes about their application are numerous. In 1997, South Africa attempted to help those with HIV and AIDS gain access to essential medicines utilizing the TRIPS flexibilities, but met strong opposition by large pharmaceutical companies. In 2001, Brazil sought to include compulsory license provisions in its patent regime, while the United States attempted to attack the proposed legislation as non-compliant with TRIPS. When the WTO implemented TRIPS, there was a divide between developed countries, who were able to easily implement TRIPS, and developing countries and LDCs, who struggled to maintain public health. On September 11, 2001, the United States acted in a manner many other nations deemed hypocritical. After the 9/11 terrorist attacks, the United States sought to use compulsory licenses to obtain antibiotics for the treatment of anthrax poisoning.

In an attempt to clarify the TRIPS flexibilities, the Doha Declaration was enacted in November of 2001. This declaration set forth one major contention; the

protection of public health is a necessity and the TRIPS agreement should not impede that general principle. It also clarified that member countries have the right to grant compulsory licenses, as well as the freedom to establish the grounds for granting them. This includes determining what constitutes a national emergency and allows the exportation of generic medications to countries with no or low manufacturing capabilities.

The Doha Declaration essentially created a waiver system by which LDCs and some developing countries may use compulsory licenses for public necessity. The first waives the obligation that compulsory licenses must be predominately used to supply the domestic market. The second waives the obligation for an importing country to pay remuneration to the patent right holder. The third allows re-export of imported pharmaceuticals within the regional trade agreement. This gives LDCs major flexibilities when including compulsory licenses in their patent laws, expanding upon the original TRIPS agreement that only permitted compulsory licenses for domestic needs.

Patent Protection Development

Historically, patent protection was excluded in most developed countries at some point in time. France, Germany, Switzerland, Italy, and Spain all have spans in history where patent law did not protect pharmaceutical patents. Generally, many countries believed that by not allowing the patenting of pharmaceuticals, it would "allow pharmaceutical companies to imitate and produce patented medicines by using new processes." Eventually, once these countries became self-sufficient and able to adequately invest in R&D, they increased their patent law standards, including allowing the patenting of pharmaceuticals.

LDCs have not had the same opportunity to progress into self-sufficient countries. Instead, many LDCs are at the point countries such as France, Spain, and Italy were before their growth. As a result, many believe it is unwise to expect LDCs to meet the minimum standards set forth by TRIPS. Without adequate time to develop the necessary infrastructure and resources to have a stable patent pharmaceutical system, LDCs face a disadvantage. The fear is that drug prices will increase, generics will decrease in availability, and medicine will become scare for those countries and citizen who need it. The LDCs believe that "these countries are acting in a hypocritical way: they are supporting the implementation of intellectual property protection for pharmaceuticals only after experiencing maturity for their own pharmaceutical industries."

To understand the full extent of the impact TRIPS has on LDCs, it is essential to understand what makes them LDCs. Countries are considered LDCs if they cannot remove themselves from two of three categories. The categories include: (1) a low gross national income, (2) human asset weaknesses, such as poor nutrition, poor health, poor educational infrastructure, and poor literacy skills, and (3) if the country is economically vulnerable. Once an LDC is able to remove themselves from two of those three categories, they then graduate from an LDC to a developing country.

Currently, Bangladesh is an LDC for two reasons. First, although better off than many LDCs, Bangladesh does not meet the requisite scores to graduate from their weaknesses in human assets. Second, Bangladesh has a low gross national income due to a lack of progress in industrial development, as well as a failure to invest in R&D. In contrast, Bangladesh is considered one of the least economically vulnerable LDCs, which would lend towards graduation. As a result, once Bangladesh has graduated from one of the two remaining categories, then they will become a developing country.

The Current Structure of Bangladesh

Currently in Bangladesh there is no law protecting pharmaceutical patents. All pharmaceutical patents submitted to the patent office reside in a "mailbox" until the TRIPS transition period runs out. This transition period extends until the year 2033. Almost all patents within this mailbox belong to foreigners and multinational corporations. This is in part because Bangladesh has a lack of technical and financial resources to perform innovative research. Additionally local pharmaceutical companies choose to research generic alternatives, rather than perform research on new and innovative medicines.

Bangladesh is in a unique situation. It has strong manufacturing capabilities, with eighty-six percent of the domestic market dominated by local players. These local players also export generic pharmaceuticals to ninety-two other countries. As a result, Bangladesh relies heavily on using generic medicine to provide for both the domestic and international markets.

In regards to TRIPS compliance, graduation will have a major effect on Bangladesh. Upon becoming a developing country, they will be required to implement patent law that complies with TRIPS. Since it is likely Bangladesh will graduate within the next 15 to 20 years, it needs to focus on several improvements. Specific areas requiring attention include local health needs, investment in R&D, regulations to ensure safe pharmaceuticals, improvements in infrastructure, focusing on prevalent diseased in the country, collaboration between local and foreign pharmaceutical companies, increase in human resources, and an improved transportation system for access to medication.

In order to determine ways in which Bangladesh can create a plan to implement these improvements, it is essential to determine how other LDCs and developing countries have coped with TRIPS compliance.

The Experiences of TRIPS Compliant LDCs and Developing Countries

Brazil

Brazil is the perfect model for other developing countries. Historically, there is an interesting development in Brazil's patent law. It went from a full patent regime, to patent protection on all subject matters except pharmaceuticals, to a TRIPS compliant regime. In becoming TRIPS compliant, Brazil chose to implement a strong compulsory license regime. Using the compulsory licenses, Brazil has essentially created a bargaining tool to

use against major pharmaceutical companies. It has been able to obtain reduce prices on medications by threatening to break patents by issuing compulsory licenses. Within the current patent law, Brazil is able to utilize compulsory licenses for national emergencies and public interest. By incorporating a broad definition of public interest, the country's basic needs are covered.

In addition to a strong compulsory license regime, Brazil has utilized parallel imports. Parallel imports are branded goods imported into a market and sold in that market without the consent of the patent holder. According to the WTO, a parallel import is "a product made legally...abroad [and] is imported without the permission of the intellectual property right-holder." Countries can accept parallel imports if the patent holder has previously commercialized the product in another country at a lower price than offered in Brazil.

Brazil has also elected to include early working exceptions, or *Bolar* exemptions. *Bolar* exemptions derive from *Roche Products, Inc. v. Bolar Pharmaceuticals Co.* Before a patent for a medication expired, Bolar Pharmaceuticals (Bolar) utilized the patented chemical in an experiment to determine if their generic product was equivalent to the patented product. In doing so, Bolar wanted to see if their product would meet the Federal Drug Administration's (FDA) approval. Bolar argued this was not infringement, but rather a way to alow the quick release of generic alternatives once the product was off patent. The court rejected this argument, stating Bolar had a business motivation to use the patented product. As a result, Congress passes a law permitting the use of patented products in an experimental setting to achieve FDA approval, known as the *Bolar* exemption.

Brazil has incorporated this *Bolar* exemption into its patent law. This permits local pharmaceutical companies to complete all procedures and tests that are necessary to register a generic product with a regulatory agency before the patent expires. In turn, once the product is off patent, companies are able to immediately market their generic versions of the medication, resulting in cheaper products for the public.

In regards to awarding patents, Brazil originally had an extremely broad definition of novelty. This allowed pharmaceutical companies to simply revise existing patents and extend the term of protection to reduce competition from generic producers. In 2001, Brazil amended its patent law to require prior approval from the National Health Surveillance Agency before a patent is granted. This ensures that patent protection will not endanger public health or create barriers for access to medicine.

Finally, Brazil's government has invested in local R&D. Government investment has pushed Brazil in the right direction to further develop R&D in order to address prevalent diseases, rather than simply rely on the production of generics. Overall, Brazil has utilized several aspect of the TRIPS agreement in a way that adequately follows TRIPS regulations, while still ensuring public health needs are met.

China

Beginning in 1992, China incorporated pharmaceuticals into its patent

law, becoming fully TRIPS compliant by 2000. Up until 2012, China continuously amended its patent laws to adopt public health measures, encourage generic producers, add compulsory licenses, and simplify the overall schematic.

China's patent law requires "absolute novelty." This means that a product must not be prior art anywhere in the world. Prior art is any other patent, publications, or disclosure of information that exists before the filing of a patent application. If the product does exist someone in the prior art in any country, then the patent will be rejected on novelty grounds. This prevents patent holders from patenting in one country, then later choosing to patent in China to extend their exclusive rights.

China also implemented a compulsory license regime, which allows the granting of compulsory licenses on five grounds. First, if China is unable to obtain a license for a patented product after a reasonable period of negotiation with fair and reasonable terms it can use a compulsory license. Second, if there is a concern for public health a compulsory license can be granted. Third, they can be granted in a state of national emergency. Fourth, if a patent holder fails to sufficiently exploit the patent without a justified reason within three years of the patent being granted, or four years from the filing date, China can use a compulsory license. Finally, if the patent violates anti-monopoly law, compulsory licenses may be granted.

Additionally, China implemented *Bolar* exemptions and parallel imports to ensure the affordability and accessibility of medicines.

One problem with China's current patent law is the data exclusivity clause. This clause protects data for a new chemical entity, or a compound not previously described in the scientific literature, for six years. Data exclusivity "allows for a period of time following marketing approval during which competing firms may not use the innovative firm's safety and efficacy data, from...trial results, to obtain marketing authorization for a generic version of the drug." This halts the quick production of generics because local producers are unable to use the data to confirm their products meet regulatory standards. As a result, this causes an increase in public health problems.

Overall, China has implemented several helpful TRIPS flexibilities into its existing patent law. The unique use of compulsory licenses demonstrates another avenue LDCs seeking to become TRIPS compliant can take.

India

India demonstrates a TRIPS compliant regime that contrasts the patent law of Brazil. India is a major domestic producer and exporter, similar to Bangladesh's structure. India's domestic producers, who cover a massive ninety-five percent of the market, control the domestic pharmaceutical market. Additionally, two-thirds of the drugs produced in India are exported to countries with low or no manufacturing capabilities. Out of the top ten pharmaceutical producers in India, two are multinational corporations.

Local pharmaceutical companies encourage the mass production of low-cost

pharmaceuticals at the expense of innovation. This allows the companies to introduce generic versions of name brand drugs to promote public health. Through reverse engineering, the local pharmaceutical companies are able to succeed at producing cheap generics, but neglect essential R&D. As a result, India has failed to invest in the manufacturing of drugs for prevalent diseases.

When India became TRIPS compliant there was an initial decline in access to medicine, and an increase in costs. In an attempt to meet rising production costs local pharmaceutical companies suffered, causing an unfavorable shift for access to public health. It was clear that the balance of interests shifted away from public interest and towards the inventor. India attempted to fix these problems by utilizing TRIPS flexibilities.

India set a new threshold for novelty by requiring much higher standards. In addition, India also implemented government use exceptions for several different categories. First, governmental use exceptions can provide medicine in public hospitals with notification. Second, the government can use an exception to waive a royalty payment. Finally, the government can obtain a patent by paying just compensation for rights to the patent. These government exceptions allow India to take control if there is an issue involving a national emergency or public health is at risk.

Additionally, India introduced a flexible compulsory license regime, allowing it to issue compulsory licenses in cases of public interest. By broadly defining public interest, it encourages local production when there is an inadequate supply of medicine or excessive pricing. The compulsory licenses can also be implemented in cases of national emergency, and India has threatened to use compulsory licenses in this manner against large pharmaceutical companies.

India's patent law also includes *Bolar* exemptions. Introducing these exemptions allows quick entry of generics and a decrease in the cost of medicine. In addition, India allows the importation of medicine even if produced under a compulsory license. India can also use patented pharmaceuticals for R&D purposes to comply with regulatory agencies.

Finally, India included a grandfather clause within their patent law. Better known as a prior use exception, this clause allows generic producers to continue producing and marketing the generic medicines. The only requirement is that the generic producer must invest in production and marketing before the introduction of the patented product. With a strong government exception regime and implementations to protect public health, India provides another strong patent law LDCs can mirror.

South Africa

Out of all four countries, South Africa has the greatest health crisis to deal with. The major HIV and AIDS crisis, as well as extremely poor access to medications, has forced South Africa to take a unique approach. South Africa imports seventy percent of medicines, including an importation of eighty percent of the drug necessary to treat HIV and AIDS. Historically, South Africa has brought to light many of the issues surrounding

the TRIPS agreement. Through issues with large pharmaceutical companies, South Africa helped the WTO see how the TRIPS agreement has affected many LDCs. South Africa brought forth several issues, including the lack of access to medication, high pharmaceutical prices, and the loss of drugs through poor security. In contrast, the large pharmaceutical companies argued that "[p]atents are the lifeblood of our industry. Compulsory licensing and parallel imports expropriate our patent rights." Due to these disputes, South Africa forced the WTO to recognize that issues exist and the big pharmaceutical companies suffered a public relations nightmare.

Even though South Africa found many issues with the agreement, they became TRIPS compliant in 1997. Even though South Africa was able to fight and make a huge difference for developing countries and LDCs, they are still struggling to create an adequate patent regime.

South Africa has never utilized compulsory licenses in order to acquire cheaper medications. This may be in part because the granting of compulsory licenses may not help South Africa's situation. South Africa has an extremely weak infrastructure, which creates major access problems for citizens. As a result, even if compulsory licenses increase the amount of medication while simultaneously decreasing cost, it is unlikely those who need the medicine in South Africa will be able to access it.

South Africa also has an extremely lacking patent office. The patent office does not check the novelty or obviousness of a patent. They simply register a patent that fulfills all of the formality requirements. This allows weak patents to easily pass the threshold to achieve exclusive rights.

South Africa was able to act as a voice for developing countries and LDCs in addressing inequalities of the TRIPS agreement. Due to of major disputes and litigation, South Africa has been unable to comply with TRIPS in a way to help their struggling infrastructure problems.

Potential Legislative Options for Bangladesh and Similarly Situated LDCs

To become TRIPS compliant Bangladesh needs to implement several successful applications used by the other four countries. Bangladesh must look at all potential legislative options to successfully comply with TRIPS, while maintaining public health.

First, Bangladesh must create a high threshold for patentability. In order to do so, there are three essential requirements to include in its patent law. In order to qualify, an invention must be new, must have an inventive step, and must have an industrial application. Novelty is essential so trivial improvements on the prior art do not receive an extended exclusive right. A detailed inventive step will ensure patents advance the existing knowledge, or have an economic significance. In order to meet these goals, Bangladesh needs to improve upon its existing draft of TRIPS compliant patent law.

Second, patent requirements must also include a best mode requirement and a requirement to disclose the origin of the information. Having a best mode

requirement gives the patent office the opportunity to deny a patent when the inventor fails to disclose the best method of producing the medicine. This allows future generic producers an opportunity to understand the best method for production because of required patent publication.

Third, Bangladesh must narrow the scope for assessing patentable claims. Currently, Bangladesh's law encourages inventors to file for broad exclusive rights. To alleviate this problem, Bangladesh should adopt provisions similar to Brazil. This would involve utilizing health agencies to approve the patent before granting, ensuring that it will not endanger public health or create barriers for access to medicine. As a result, Bangladesh will hopefully succeed in limiting three things: (1) granting patents that lack genuine novelty, (2) granting exclusive rights that may be harmful to public health, and (3) decrease the likelihood an already existing patent term will be elongated.

Fourth, Bangladesh should provide exceptions to product patent rights, including *Bolar* exemptions and parallel imports. The use of *Bolar* exemptions will give local pharmaceutical producers of Bangladesh the opportunity to have generics readily available when a product is no longer patent protected. Since Bangladesh and India have similar local pharmaceutical infrastructure, Bangladesh should mirror India's approach. This will allow local producers to conduct research on patented pharmaceuticals in order to produce cheap generics. Additionally, Bangladesh should implement a parallel import regime. Pursuant to Article 6 of the TRIPS agreement, once patent holders have sold a patented product they cannot prohibit subsequent resale of that product because they have exhausted their rights. Currently, there are three types of exhaustion regimes: (1) national, (2) regional, and (3) international. Applicable here is international exhaustion, which extinguishes a patent holders rights once the product is sold anywhere in the world. Bangladesh should use this exhaustion method in order to use this as a bargaining tool against large pharmaceutical companies. With the ability to import pharmaceuticals once there is a first sale anywhere in the world, Bangladesh can force patent holders to sell their protected pharmaceuticals at reasonable and affordable prices.

Fifth, Bangladesh should utilize compulsory licenses. Pursuant to the Doha Declaration, member countries have the freedom to grant compulsory licenses, as well as determine the grounds for which they are granted. As a result of trial and error by other developing countries and LDCs, some less controversial uses include using compulsory licenses to correct anticompetitive practices, in times of national emergency, during public health crises, and to provide health care to the poor. As the law currently stands in Bangladesh, there is no expert body to deal with the granting of compulsory licenses, and they only satisfy domestic needs. Bangladesh needs to adopt a less restrictive compulsory license regime, such as the one used by India. This would involve using compulsory licenses to protect public interest by threatening to use compulsory licenses for national emergencies, with a broad definition of national emergency. Additionally, Bangladesh should designate an administrative body, or give the government the power to grant compulsory licenses, much like the system followed in Brazil.

Compulsory licenses should also be issued for nonworking, when patent

holders fail to adequately commercialize the product from three years of the granted patent date. These include: (1) when a reasonable requirement of public with respect to patented invention has not been satisfied, (2) when demand for production has not been adequately met, (3) when the invention is not available to the public at an affordable price, and (4) when a patented invention is not worked in the territory of Bangladesh.

Sixth, Bangladesh should implement a prior use exception, following the method used by Brazil. This involves requiring a local producer to be acting in good faith, before the filing of the priority date for the patent application, and be exploiting the product in their country. If all of those qualifications are met, then the local producer will be entitled to use the patent in the same way they were before.

Seventh, Bangladesh should encourage pre-grant and post-grant oppositions to patents. Currently, there are no options to oppose a patent after it is granted. As a result, many invalid patents in Bangladesh are upheld due to the inability to argue their validity, as well as the fact that no groups or people oppose patents. Bangladesh should encourage public interest groups and local pharmaceutical companies to oppose attempts by others to receive patents, as another source of checks and balances.

Eight, there needs to be a clause in Bangladesh's patent law addressing duration of patents. Although TRIPS compliance requires twenty years of protection from the filing date, Bangladesh law should include a qualification that allows amendment of the existing duration. This will be useful if TRIPS changes in any way in the future.

Finally, Bangladesh should not adopt any overprotective enforcement provisions. Many LDCs are under pressure to place criminal sanctions on intellectual property right violations. This could restrict access to medicines and could have an effect on generic producers willingness to enter the market. Additionally, Bangladesh should not allow a claim for patent infringement to also be a claim for counterfeiting medications.

If Bangladesh is able to successfully implement all nine of these changes, they should be able to comply with TRIPS while maintaining public health. Although there is no guarantee that Bangladesh will be able to implement these plans, using the four other countries as a guide, this seems to be the best option for Bangladesh now.

Conclusion

Overall, this novel adequately analyzes how TRIPS has affected different developing countries and LDCs in different settings. Further, the study gave Bangladesh an outlook that can help it adapt to TRIPS. As a result, Bangladesh has an adequate guidepost, but as the author has indicated, Bangladesh is in a unique position. By using Bangladesh as the basis of the study, the data applied to a country with strong manufacturing capabilities. Being in this unique position, many other LDCs are unable to compare, and will be unable to implement the changes in the same way as Bangladesh. In order for this study to act as a model for developing countries and LDCs that must meet TRIPS compliance in the near future, the data should be applied to another LDC. For example, applying this study to an LDC with low or no manufacturing capabilities

will be advantageous in covering more countries that will face TRIPS at some point. Since the TRIPS agreement is not going anywhere soon, these LDCs still need further guidance and assistance.

USPTO Guidelines: Effects on Natural Product Pharmaceuticals

Lindsey M. Round[1]

Abstract

Over the past few years, the United States Patent and Trademark Office (USPTO) has issued a set of Guidelines with updates to guide patent examiners in determining whether products derived from natural products are patentable. The USPTO drafted and issued the Guidelines based on the interpretation of case law set forth by the Supreme Court of the United States. However, the issues that the Supreme Court addressed were very specific. Therefore, the Guidelines interpret the case law too narrowly and may cause unintended consequences in the patent field. Patent examiners rely heavily on the issued Guidelines when responding to patent applications and essentially treat the Guidelines as binding law. However, the Guidelines are not the law. They are issued by the USPTO to aid examiners in interpreting the law. They are simply that: one interpretation on the law.

One area that the Guidelines target is the pharmaceutical industry. Consequently, because of these Guidelines, patent examiners have begun to reject patent applications for pharmaceutical products that would have recently been allowed. These rejections and the trend toward examiners having a narrower interpretation of case law precedent could have detrimental effects in the pharmaceutical industry in the future.

Introduction

Obtaining a patent is much more difficult than the public may believe. Many patent applications are rejected and claims must be amended before a patent is ultimately granted. Essentially, patent attorneys and the United States Patent and Trademark Office have conflicting goals that must be resolved and a compromise must be reached before a patent is granted. A patent attorney desires to obtain the broadest protections for his client, while the United States Patent and Trademark Office wants to keep the patent as specific as possible and ensure that it truly only applies to the invention at hand. Nevertheless, this conflict creates a long, drawn out process where examiners reject claims at least once before they are accepted.

Furthermore, the USPTO 2014 Interim Guidance on Patent Subject Matter Eligibility has made this process even more uncertain and drawn-out for individuals seeking patents for products derived from nature-based substances. These products include drugs or pharmaceuticals that may be isolated or purified forms of natural substances. Throughout much of history, such products were clearly patentable and such science was regarded as some of the most important and pivotal advancements in

1 Syracuse University College of Law, Juris Doctor expected 2018.

health and medical-related fields. However, with the issued Guidelines, patent examiners are rejecting patent applications for products that would have previously been granted a patent. In creating the Guidelines, the United States Patent and Trademark Office took narrow holding of recent case law and applied them to a broad range of scenarios. Examiners are consequently treating the Guidelines as law and rejecting claims that the Supreme Court of the United States did not intend to affect through its holdings.

I. What is a patent?

Intellectual property rights may be protected by obtaining a trademark, copyright, or patent through filing an application for the appropriate protection. This application must be approved by either the United States Patent and Trademark Office (hereinafter "USPTO") or the United States Copyright Office, depending on which protection the individual seeks. Patents are detailed and specific protections that give an inventor exclusive rights to his particular invention.

To understand why patents are important and why USPTO patent examiners are denying patent to products that should be patentable, it is important to understand the fundamentals of a patent. There are statutes drafted by Congress that govern patent law within the United States. The Constitution of the United States gives Congress the power to enact such statutes through Article I Section 8.[2] This section specifically states 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."[3] To carry out this power, Congress has enacted patents laws to secure the rights of the inventors. Overtime, the USPTO has evolved into what we know it as today. Patent examiners are the primary individuals that work to ensure that these rights are protected by examining patent applications, performing searches to ensure that the idea is novel and unanticipated, and granting patents if these criteria are fulfilled.

However, as alluded to in the Constitution, a patent does not grant infinite protections to the inventor of a product. Rather, a patent has a twenty-year term of protection extending from the date on which the patent application was filed at the USPTO.[4] Under certain, specific circumstances, the twenty-year term would extend from the date of an earlier application, typically a foreign application.[5] However, while foreign patents or foreign applications may alter the beginning date of the patent protection, it is important to note that a patent granted by the USPTO is "effective only within the United States, U.S. territories, and U.S. possessions."[6] In other words, if an inventor wishes to gain patent protections in another country, he must also file the proper applications in that particular country. Additionally, if the individual has

2 General Information Concerning Patents, USPTO (Oct. 2015), https://www.uspto.gov/patents-getting-started/general-information-concerning-patents.
3 Id.
4 Id.
5 Id.
6 Id.

been granted patent protections in a foreign country and wishes to have his intellectual property protected in the United States, he must also file a patent application at the UPSTO.

Second, it is critical to understand what exactly a patent issued by the USPTO protects. Under 35 U.S.C. § 154(a)(1), a patent confers "the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States."[7] Further, if the patent is for a process, the protection extends to products made by that process.[8]

Lastly, there are three different types of patents that must be distinguished.[9] The three types of patents are utility patents, design patents, and plant patents.[10] Utility patents apply to inventions or discoveries of "new and useful process[es], machine[s], article[s] of manufacture, or composition[s] of matter, or any new and useful improvement[s] thereof."[11] A design patent may be obtained for the invention of "a new, original, and ornamental design for an article of manufacture."[12] However, plant patents require an additional step than just discovering a plant. Additionally, the inventor must asexually reproduce the new, distinct plant.[13] The first type of patent, utility patents, are very common. Pharmaceutical drugs and the process for creating them, which is the topic of this note, fall under utility patents.

A. Natural Products History and Patent Applications

Since the 19th Century, individuals have been able to receive patents for useful and novel identified and purified natural substances.[14] Some of the most famous and important patents in history fall under this category. For example, in 1873, Louis Pasteur received a patent for beer yeast "free from organic germs of disease."[15] In addition, Felix Hoffman received a patent in 1898 for purified acetyl salicylic acid.[16] This compound is more commonly known as aspirin.[17] Products like these have made revolutionary changes not only in the United States, but worldwide.

There are many relevant statutes that individuals must be aware of when applying for a patent. However, Title 35 United States Code Sections 101, 102, 103, and 112 specify the conditions of patentability and are widely used when issuing patent rejections.

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7 35 U.S.C. § 154 (2012).
8 Id.
9 General Information Concerning Patents, supra note 2.
10 Id.
11 Id.
12 Id.
13 Id.
14 Nicholas Landau, United States: The New Patent Policy on Natural Products Is a Game Changer for Universities and Life Sciences Companies, Mondaq (last updated Sept. 24, 2014), http://www.mondaq.com/united-states/x/342122/Patent/The+New+Patent+Policy+on+Natural+Products+Is+a+Game+Changer+for+Universities+and+Life+Sciences+Companies.
15 Id.
16 Id.
17 Id.

Title 35 United States Code Section 102 addresses novelty.[18] Section 102(a)(1) states that if the "claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention" the current application claims are not patentable.[19] In other words, if the patent is not a new idea and there is evidence that someone has already thought of this invention, the claims at issue are not eligible for a patent. There are exceptions to this rule, but this is the general notion.

In addition, Title 35 United States Code Section 103 addresses non-obvious subject matter.[20] This section states that "if difference between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art" the claimed invention is not patentable.[21] Many times this statute is implemented by patent examiners combining two previously granted patents or patent applications and inferring that by examining such prior art, it would have been obvious to combine them to create the claimed invention. If such obviousness exists, the claimed invention is not patent eligible.

Furthermore, Title 35 United States Code Section 112 addresses the specification in a patent application.[22] The most important aspect of section 112 is that "the specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains [. . .] to make and use the same."[23] In other words, if the specification is not specific and clear enough, the examiner may reject the claims for being ambiguous. A patent must include enough information that an individual with sufficient knowledge in the field would be able to perform the procedure or create the invention on their own.

However, Title 35 United States Code Section 101 specifies exactly what subject matter is patent eligible. This section is most relevant section when discussing the patentability of natural product claims. Section 101 deems as patentable "any new and useful process, machine, manufacture, or composition of matter or any new and useful improvement thereof."[24] In addition, per the Manual of Patent Examining Procedure (hereinafter "MPEP"), all patent claims must be construed according to their "broadest reasonable interpretation."[25] This means, for instance, if a claim reads "a silver vehicle," the examiner must interpret that to mean any sort of thing used to transport people or goods. The examiner must not assume that the vehicle is an automobile, much less a car or truck. Individuals filing for patents will attempt to gain as much coverage as possible and patent as much as they can to gain control of the field, but the examiner must work

18 35 U.S.C. § 102 (2012).
19 Id.
20 35 U.S.C. § 103 (2012).
21 Id.
22 35 U.S.C. § 112 (2012).
23 Id.
24 35 U.S.C. § 101 (2012).
25 Manual of Patent Examining Procedure, 9th ed., rev. 7 (Nov. 2015) (hereinafter "MPEP") § 2111.

to narrow their claims as much as possible to ensure that the claims match exactly the "process, machine, manufacture, or composition of matter" that they are claiming.

B. International Intellectual Property Law Agreement

Before addressing any issues with patents refused or issued by the USPTO or any intellectual property concerns specific to the United States, it is important to address the Agreement on Trade-Related Aspects of Intellectual Property Rights (hereinafter "the TRIPS Agreement"). This Agreement, which has been in effect since January 1, 1995, is "the most comprehensive multilateral agreement on intellectual property."[26] The TRIPS Agreement does not completely govern what intellectual property laws the United States, one of the many members of the agreement, must make.[27] However, the TRIPS Agreement does set out the "minimum standards of protection to be provided by each Member."[28] In other words, any country which is a party to the Agreement may provide additional intellectual property protections to individuals, but it may not provide less.

While the TRIPS Agreement addresses multiple different types of intellectual properties, the main focus of this note is patents, so that is the main section that will be addressed here. Many of the terms of the TRIPS Agreement are similar, if not identical, to the criteria set forth by the USPTO.

Regarding patents, the TRIPS Agreement requires that countries allow any product or process inventions to be patentable.[29] The countries that are part of the TRIPS Agreement agree to not discriminate as to the patentability of inventions based on the field of technology to which the invention belongs.[30] Further, the country may not discriminate as to the patentability of technologies based on the origin of the product.[31] This criterion applies not only to whether products are imported or produced locally, but also the specific place of invention if created within the United States.[32]

While prohibiting discrimination as to what may be patented, the TRIPS Agreement also sets forth three specific exceptions of products that each country reserves the right to refuse a patent.[33] The first exception is for products that are contrary to morality, such as inventions that are "dangerous to human, animal or plant life or health or seriously prejudicial to the environment."[34] Second, countries may refuse a patent for "diagnostic, therapeutic and surgical methods for the treatment of humans or animals."[35] Third, under the TRIPS Agreement, a country may reject patents for "plants and animals other than micro-organisms and essentially biological processes

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26 Overview: the Trips Agreement, World Trade Organization, https://www.wto.org/english/tratop_e/trips_e/intel2_e.htm#generalprovisions (last visited May 26, 2018).
27 Id.
28 Id.
29 Id.
30 Id.
31 Overview: the Trips Agreement, supra note 26.
32 Id.
33 Id.
34 Id.
35 Id.

for the production of plants or animals other than non-biological and microbiological processes."[36] However, this last exception requires the country to provide another system of protection for plant varieties if they do not issue patents for these substances.[37]

Furthermore, the TRIPS Agreement requires that countries included in the agreement give exclusive rights to the inventor of the patented product, including the right to make, use, offer for sale, sell, and import such product to fulfill these other purposes.[38] By signing the TRIPS Agreement, the United States has agreed to these baseline rules regarding patenting products.

C. Recent Case Law

For many years, the Court relied on the legal precedent set forth in *Diamond v. Chakrabarty*, which held that a man-made bacterium with "markedly different characteristics from any found in nature" and "having the potential for significant utility" was patentable.[39] The USPTO used the *Diamond* standards of "markedly different characteristics" and "potential for significant utility" as standards for many years.

Furthermore, the Court in *Diamond* noted that the relevant legislative history leading up to its decision supported a broad interpretation of 35 U.S.C. § 101.[40] The Court pointed out that under The Patent Act of 1793, Thomas Jefferson defined patentable subject matter as "any new and useful art, machine, manufacture, or composition, and any new or useful improvement [thereof]."[41] Today, the statutory language is very similar to that set forth by Jefferson over 200 years ago, which reflects the legislature's intent to maintain the broad spectrum of patentable material.[42] Specifically, the only difference between the language today and that set forth is that 35 U.S.C. § 101 replaces the word "art" with "process."[43]

In the past five years, three monumental Supreme Court cases have further addressed patentable subject matter. These cases address the patentability of natural products and laws of nature. These three cases, *Mayo Collaborative Services v. Prometheus Lab., Inc.*, *Association for Molecular Pathology v. Myriad Genetics, Inc.*, and *Alice Corporation Pty. Ltd. v. CLS Bank International*, have further explored this topic and provided more insight into the issues presented with natural product and laws of nature.

Specifically, the Court in *Mayo Collaborative Services* held that patents claiming the underlying law of nature are not patentable.[44] This case involved the attempt to patent the relationships between concentrations of metabolites in the blood and the chance that a specific dosage of a certain drug will be ineffective or harmful.[45] The

36 Overview: the Trips Agreement, supra note 26.
37 Id.
38 Id.
39 Diamond v. Chakrabarty, 447 U.S. 303, 310 (1980).
40 Id. at 308.
41 Id.
42 See 35 U.S.C. § 101.
43 Diamond, 447 U.S. at 308; 35 U.S.C. § 101.
44 Mayo Collaborative Serv. v. Prometheus Lab., Inc., 566 U.S. 66, 92 (2012).
45 Id. at 75.

Court reasoned that these patent application claims simply stated laws of nature.[46] Furthermore, any claims that were not a recitation of laws of nature drew upon "well-understood, routine, conventional activity" that the scientific community was familiar with and overall added no significant value to the stated laws of nature.[47] Therefore, there was not enough usefulness or novelty to merit the patentability of proposed applications of "unpatentable natural correlations."[48] However, the Court pointed out a distinction between the issue presented in *Mayo Collaborative Services* and a possible different situation that may be patent eligible.[49] The Court held that if these claims were to be patented, they would "tie up too much future use of laws of nature," and did not "confine their reach to particular applications" of the claimed natural laws.[50] The Court distinguished this from patents on new drugs or new uses of existing drugs.[51]

In addition, *Myriad Genetics, Inc.* held that isolated DNA includes naturally occurring DNA segments and is therefore not patentable, but synthetically created DNA is not naturally occurring and is therefore patentable.[52] This holding follows from the fundamental idea that products are not patentable unless they are new and useful.[53] While a product may be different from its naturally occurring form, it does not necessarily or automatically possess "markedly different characteristics."[54] The Court goes on to list specific exceptions where the isolated DNA would be patentable.[55] First, the Court suggests that if Myriad Genetics had created an innovative method to isolate the DNA and applied for a method patent, its claims may have been patentable.[56] However, Myriad Genetics' claims included a well-known process of isolating DNA.[57] In addition, the claims at issue did not involve new applications of knowledge.[58] If such claims did involve new applications of knowledge, they may have been patentable.[59] Lastly, the Court did not express any opinion as to whether altered DNA would have been patentable.[60] Rather, it simply held that unaltered, isolated, naturally occurring DNA is not patentable.[61]

Most recently, though less applicable to natural products, *Alice Corporation Pty. Ltd. v. CLS Bank International* held that both claims that recite an abstract idea and claims that recite "a handful of generic computer components configured to implement the

46 Id. at 77.
47 Id. at 79.
48 Id. at 80.
49 Mayo Collaborative Serv., 566 U.S. at 87.
50 Id.
51 Id.
52 Ass'n for Molecular Pathology v. Myriad Genetics, Inc., 569 U.S. 576, 580 (2013).
53 See 35 U.S.C. § 101.
54 See Myriad Genetics, Inc., 569 U.S. at 595; See also Diamond, 447 U.S. at 310.
55 Myriad Genetics, Inc., 569 U.S. at 595-96.
56 Id. at 595.
57 Id. at 595-96 (citing Ass'n for Molecular Pathology v. U.S. Patent and Trademark Office, 702 F.Supp.2d 181, 202-03 (S.D.N.Y. 2010)).
58 Id. at 596.
59 Id. (citing Ass'n for Molecular Pathology v. U.S. Patent and Trademark Office, 689 F.3d 1303, 1349 (F. Cir. 2012)).
60 Myriad Genetics, Inc., 569 U.S. at 596.
61 Id.

same idea" are not patentable.[62] More broadly, claims that "add nothing of substance of underlying abstract idea" are not patentable.[63]

II. USPTO Issued Guidelines

In December 2014, the USPTO issued subject matter eligibility guidelines in response to recent Supreme Court decisions, in efforts to assist patent examiners in determining whether patents for natural products are patentable.[64] At the time of this publication, these guidelines were most recently updated in January 2018.[65] Examiners at the USPTO must stay current on recent case law to ensure that individuals and companies are not obtaining patents for inventions that the Court has ruled are unpatentable. Specifically, the new guidelines address patents involving "chemicals derived by natural sources, foods, metals/metallic compounds in nature, minerals, natural materials, nucleic acids, organisms, proteins and peptides, other substances found in or derived from nature." [66]

Specifically, the new USPTO guidelines devised a two-part subject matter eligibility test for evaluating natural products patents from the criteria set out in *Mayo Collaborative Services*.[67] First, this two-part test asks whether the claim is patent eligible under 35 U.S.C. § 101.[68] As mentioned before, in order to be eligible, the claim must be for a process, machine, manufacture, or composition of matter (or an improvement upon one of these).[69] If the claims are not eligible under 35 U.S.C. § 101, then the patent is ineligible and therefore, the natural products aspect of the test does not need to be explored. The second step of the inquiry has two subsections.[70] Part (2a) asks whether the claim is "directed to a law of nature, a natural phenomenon, or an abstract idea.[71] These types of claims are known as judicial exceptions.[72] If the answer to this inquiry is no, the material is patent eligible.[73] If yes, closer scrutiny is required.[74] If the answer is yes, further scrutiny is required since there is a risk that the claimed invention "will 'tie up' the excepted subject matter and pre-empt others from using the law of nature, natural phenomenon, or abstract idea."[75] If the answer to (2a) is yes, the second subsection (2b) asks whether the claim recites "additional elements that amount

62 Alice Corp. Pty. Ltd. v. CLS Bank Int'l, 134 S. Ct. 2347, 2358 (2014).
63 Id.
64 2014 Interim Guidance on Subject Matter Eligibility, 79 Fed. Reg. 74,618, 74,621 (Dec. 16, 2014) (to be codified at 37 C.F.R. pt. 1).
65 Subject matter eligibility, USPTO, https://www.uspto.gov/patent/laws-and-regulations/examination-policy/subject-matter-eligibility (last visited May 26, 2018).
66 Landau, supra note 14.
67 2014 Interim Guidance on Subject Matter Eligibility, 79 Fed. Reg. at 74,621.
68 Id.
69 Id.
70 Id.
71 Id.
72 2014 Interim Guidance on Subject Matter Eligibility 79 Fed. Reg. at 74,621.
73 Id. at 74,622.
74 Id.
75 Id. at 74,621.

to significantly more than the judicial exception."[76] If no, the claims are ineligible.[77] However, step (2b) allows for examiner discretion, and the patent examiner must use his or her expertise in the art to make this determination while considering the claim as a whole.[78] If the answer to the (2b) inquiry is yes, the claim qualifies for patent eligibility, but is not necessarily patent eligible.[79]

In addition to the two-part inquiry, natural product must be "markedly different" than any similar substance found in nature.[80] To determine if the product is "markedly different" requires different analysis depending on the nature of the claims.[81] For instance, if there are multiple components to the product, only the resultant must be "markedly different."[82] For "product-by-process" claims, only the product itself must be "markedly different."[83] Furthermore, for all natural products, the product may be claimed by itself or may be a limitation of a claim.[84] However, process claims themselves are not subject to this inquiry.[85] The examiner may look at "biological or pharmacological functions or activities," "chemical and physical properties," phenotype, and "structure and form, whether chemical, genetic or physical" to determine if a product is "markedly different" in "structure, function, and/or other properties."[86] For instance, purified or isolated products are eligible if there are sufficient changes in their characteristics.[87] Moreover, the guidelines provide twelve total factors to assist examiners in determining whether the claim product is "markedly different," but ultimately this is a subjective test.[88] If the examiner determines the product is "markedly different," then the product is patent eligible.[89]

A. Effects of New Guidelines

While the newly issued USPTO guidelines draw upon case law and statutes to guide patent examiners in determining what is patent eligible and what is not, the guidelines themselves are not law and not statutory regulations.[90] However, patent examiners ultimately decide who gets a patent and who does not, so patent applicants must abide by these guidelines and essentially treat them as law.[91]

While these guidelines may appear logical and fair at first glance, under the first set of guidelines set out in December 2014, almost half of the drugs that were patented

76 Id.
77 2014 Interim Guidance on Subject Matter Eligibility, 79 Fed. Reg. at 74,621.
78 Id. at 74,624.
79 Id.
80 Id. at 74,622-23.
81 See id. at 74,623.
82 2014 Interim Guidance on Subject Matter Eligibility, 79 Fed. Reg. at 74,623.
83 Id.
84 Id.
85 Id.
86 Id.
87 2014 Interim Guidance on Subject Matter Eligibility, 79 Fed. Reg. at 74,623.
88 Landau, supra note 14.
89 2014 Interim Guidance on Subject Matter Eligibility, 79 Fed. Reg. at 74,624.
90 Landau, supra note 14.
91 Id.

between 1981 and 2010 would have been rejected.[92] For instance, patent applications were rejected for claims such as "proteins intended for diagnosis" and "medicines extracted from marine organisms."[93] In addition, the guidelines specifically set out various different examples to guide patent examiners.[94] Related to pharmaceuticals, one example looks at different variations of amazonic acid.[95] Claim 1 of the example is for purified amazonic acid, and is held to be patent ineligible.[96] Since the claim is for a product that does not have "markedly different" characteristics from anything that occurs in nature, it is subject to a "product off nature" judicial exception and must have features that add "significantly more" to the judicial exception.[97] Here, the USPTO says that this purified substance does not add "significantly more" to its "naturally occurring counterpart."[98] On the other hand, the USPTO suggests that "purified 5-methyl amazonic acid" would be patent eligible since it is structurally different than naturally occurring amazonic acid.[99] The policy reasons given for allowing this form of amazonic acid to be patented is that it does not prohibit or prevent individuals from using the naturally occurring form of this acid.[100]

This guidance, set out by the USPTO, cites *Myriad Genetics, Inc.* in its reasoning, however, this reference is misapplication of the Supreme Court case law.[101] In *Myriad Genetics, Inc.*, the patent did not claim utility, but Myriad Genetics argued that the claims for isolated DNA which includes naturally occurring DNA segments, should be patentable since there was a new utility to this isolated DNA.[102] The guidelines distinguish this type of product from gunpowder, which is patentable, although it may be merely the combination of naturally-occurring products, because the explosive property of gunpowder makes it "markedly different" from any naturally-occurring product.[103] Therefore, the Court left open the option that if the utility of isolated product were distinct, the product itself may be patentable since it could be used in new, innovative ways.[104] The gunpowder example claims only gunpowder composed of three naturally-occurring substances, it does not include the utility in the claims.[105] There is an argument that since gunpowder can only be used to explode things, this is a distinct exception. However, an isolated natural product may be the cure for cancer or may have other life-changing applications, but simply claiming the isolated substances may

92 Erika Check-Hayden, Biotech Reels over Patent Ruling, 511 Nature 138, 138 (2014).
93 Id.
94 Nature-Based Product Examples, USPTO 1, 3 (Dec. 16, 2014), https://www.uspto.gov/sites/default/files/documents/mdc_examples_nature-based_products.pdf..
95 Id.
96 Id. at 4.
97 Id.
98 Id.
99 Nature-Based Product Examples, supra note 94 at 4.
100 Id.
101 Jonathan Singer & Rebecca Shult, USPTO Guidance on Natural Product Development, Pharmaceutical Compliance Monitor (Dec. 5, 2014), http://www.pharmacompliancemonitor.com/uspto-guidance-natural-product-development/8057/.
102 Id.; Myriad Genetics, Inc., 569 U.S. at 580.
103 Nature-Based Product Examples, supra note 94 at 1.
104 Singer & Shult, supra note 101.
105 Nature-Based Product Examples, supra note 94 at 1.

cause the examiner to reject the patent under these guidelines. These guidelines seem to automatically apply utility to patent application claims such as gunpowder, but not substances that could be used in pharmaceuticals or other similar applications.

D. International Effects of Guidelines

In addition, the United States seems to be alone in adopting natural products exceptions to patents, which may have international effects.[106]In fact, the TRIPS Agreement, which, as mentioned previously, the United States and most other industrialized countries have signed, exempts only certain types of subject matter from being patented.[107] Natural-products are not one of these exemptions.[108]

One may argue that drugs derived from naturally-occurring substances meet the second or third exception set out by the TRIPS Agreement. However, that is not the case. The second exception, "diagnostic, therapeutic and surgical methods for the treatment of humans or animals," does not encompass pharmaceuticals derived from natural substances, nor the methods used to isolate or purify such compounds.[109] Pharmaceuticals are used to treat humans and animals, and may be considered "therapeutic." However, the chemical composition of such a drug is clearly not a method for treating individuals or animals. Rather, the drug would be considered a product used to treat individuals or animals. Therefore, these products are not excluded from patents per the TRIPS Agreement under the second exception.

Furthermore, the third exception, while it appears to encompass naturally occurring substances also does not apply the such pharmaceutical products that are at issue here. This exception excludes primarily "plants and animals" and "biological processes for the production of plants or animals."[110] Pharmaceuticals that have been derived or isolated form naturally-occurring substances may very well come from plants. However, the key distinction here is that these products are derived or isolated from plants, but they are not the plants themselves. Scientists had to perform research and physically isolate or perform other science to obtain the final product that they seek to patent. Therefore, the pharmaceuticals discussed here that are somehow derived from naturally-occurring substances in one way or another do not fall under the third exception.

Therefore, since pharmaceuticals derived from naturally-occurring substances do not fall within any of the exceptions described in the TRIPS Agreement, they may be readily patentable in other nations throughout the world. This could have substantial effects in the United States, where it has become arguably more difficult and undoubtedly more uncertain to acquire such a patent. With the European Union, China, and Japan having almost twice a Gross Domestic Product as the United States, individuals may turn to these international markets to obtain patents for their

106 Landau, supra note 14.
107 Id.
108 Id.
109 Overview: the Trips Agreement, supra note 26.
110 Id.

products.[111] In particular, since these foreign markets allow patents for "purified natural substances" and "combinations of natural substances," inventors may "consider shifting the focus of their research to problems that are consequential in major markets outside of the [United States], and away from problems that are unique to the [United States] or primarily of consequence in the [United States]."[112]

This shift could be detrimental to United States, especially with respect to pharmaceuticals. Pharmaceutical drugs are necessary world-wide. There are certain drugs directed at specific regional or national epidemics or diseases, but overall, many drugs are applicable world-wide. If someone in the United States purifies a specific natural-product and finds a revolutionary application for the purified substance, they may not be able to patent such a substance under the new USPTO guidelines. They may be able to obtain a patent for the utility of the product, but not the product itself. However, the individual could obtain a patent for the purified substance from another country, such as China or Japan. The substance would not be patented in the United States, but the individual may be able to produce the substance internationally and sell it world-wide. The United States would then have to pay to import such a substance and would not gain the money they typically would from the patent, had it been filed and approved in the United States.

E. Guiding Examiners

While the Guidelines are used to "guide" examiners when determining whether specific subject matter is patentable, it is important to remember that the Guidelines themselves are not binding law. Rather, the Guidelines are interpretations set forth by the USPTO of binding case law set forth by the Supreme Court of the United States. Moreover, the Guidelines specifically state that "rejections will continue to be based upon substantive law, and it is these rejections that are appealable."[113] This standard refers to the rejections made by examiners under 35 U.S.C. § 101 pertaining to whether specific subject matter is patentable. In other words, an examiner may not reject a patent based solely upon the examples and standards set forth in the Guidelines and there must be relevant, binding case law or statutes that support the patent application rejection. An individual may use the substantive law to appeal the rejection by arguing that there is a different interpretation of the law that would allow this invention to be patented or the case law that the examiner claims makes the invention unpatentable simply does not apply.

Furthermore, the Guidelines specifically require that examiners continue to issue rejections that contain thorough and complete reasoning.[114] Inventors and their attorneys clearly believe that the technology or invention that they are filing a patent application for is patentable, so an examiner must precisely state his reasoning for rejecting such claims. This clear rejection allows attorneys to rework the claims or inventors to make changes to their products to ensure that they will ultimately receive a

111 Landau, supra note 14.
112 Id.
113 2014 Interim Guidance on Subject Matter Eligibility, 79 Fed. Reg. at 74,619.
114 Id. at 74,624.

patent. For instance, since the most relevant judicial exception for pharmaceuticals is the natural products exception, examiners must not only identify the exception specifically as it is stated in the patent application claim, but also explain why it is an exception and why the claim product does not amount to "significantly more" than the naturally occurring substance.[115]

Lastly, each patent application is entitled to a complete examination by a patent examiner.[116] In other words, even if a claim is deemed inappropriate subject matter for a patent, the examiner must not stop at a 35 U.S.C. § 101 rejection.[117] This means that examiners must also determine whether each claim is patentable under 35 U.S.C. §§ 102, 103, and 112 and ensure that it does not fall within non-statutory double patenting.[118]

F. USPTO/Patent Examiners Overstepping

Ultimately, the USPTO has misapplied Supreme Court holdings and created broad guidelines to address a multitude of hypothetical cases that were not at issue before the Supreme Court. The cases before the Supreme Court that were the primary reasoning and precedent for creating these USPTO guidelines on natural products had very fact specific holdings. There is no evidence in any of the issued opinions that the Supreme Court intended for the case law to apply as broadly as the USPTO has applied it. The USPTO has extracted the rules from these cases to apply to a widespread range of hypothetical cases in developing the guidelines. There is no indication that these cases and holdings were meant to apply to pharmaceuticals or any other natural products that were not specifically mentioned in the holdings. However, many applications that would have previously been accepted are now being rejected under the new guidelines.

While these issued USPTO guidelines are not law per se, patent examiners and patent applicants alike treat them as such. Patent examiners use the guidelines to determine which patent application claims may be patented and which must be rejected under 35 U.S.C. § 101. If an individual wants to obtain a patent, he must abide by these guidelines since patent examiners are the ones that make the decision of whether to grant a patent, and they abide by these guidelines. An individual may appeal a patent application rejection, but that requires more time and money. The patent application process is already expensive and time-consuming. Therefore, it may be an added cost to the inventor to appeal something that he arguably should have been granted a patent on in the first place. Therefore, these guidelines make an already expensive and time-consuming process even more expensive and time-consuming. This is not practical and not fair to patent applicants. Applicants should not have appeal decisions just because the USPTO has a monopoly and the power to require individuals to appeal if individual examiners make decisions that ultimately do not follow the relevant statutes and extrapolate case law too far.

115 Id.
116 Id. at 74,625.
117 Id.
118 2014 Interim Guidance on Subject Matter Eligibility, 79 Fed. Reg. at 74,625.

Nevertheless, this is an issue for the legislature to decide, unless the Supreme Court directly addresses a case where the issue is the patentability of natural-product pharmaceuticals. The USPTO should not take it upon itself to apply far-reaching case decisions to create guidelines that will apply in all natural-product cases. In the meantime, the USPTO must loosen its guidelines and simply inform examiners of what the binding case law says about the issues which it has specifically addressed.

III. Potential Future Consequences

The USPTO Guidelines, at the very least, are requiring examiners to go through a more stringent examination process to determine if a natural product is patentable. The Guidelines leave it to the examiner's discretion as to whether a substance is "markedly different" than a naturally occurring substance in either function or structure. Examiners may have different views on the definition of "markedly different" and what precisely meets this criterion. This thorough inquiry will naturally deter inventors and scientists from filing a patent application for products which they believe may or may not fall within this realm of patentability. Simply filing for a patent may cost thousands of dollars.[119] Therefore, if an individual does not believe he will leave the long and tenuous patent application process with a patented product, he may abandon the product and endeavor on a more profitable path.

However, especially in the pharmaceutical industry, determent from obtaining patents may have larger consequences than an individual not having exclusive rights to the product. When a product is not patentable, there is less incentive for others to make improvements on that product. Pharmaceuticals is a field where improvements are imperative to save peoples' lives. If no improvements and scientific discoveries were made on medicines throughout history, many diseases that are practically cured in developed nations, such smallpox, would not be so rare today. However, the problem is that many drugs are purified natural products. Like mentioned in the *Introduction*, aspirin is simply a purified natural product. If Felix Hoffman had not decided to pursue the path of purifying the chemical compound found in aspirin because he was afraid that it would not be patentable and he would therefore not receive a patent, aspirin, which we now consider a fundamental pharmaceutical drug, may have taken years to discover.

Therefore, currently, patents are necessary in the constantly evolving and improving field of pharmaceuticals. Patents encourage competition and ensure that the best possible products are discovered and marketed. However, patents also consequently ensure that the rich and those living in developed countries benefit from the advances in medicine. In fact, approximately ten million individuals die every year due to the unavailability and lack of affordability of necessary medications.[120] Furthermore, since certain drugs in pharmaceutical industry may be very profitable,

119 USPTO Fee Schedule, USPTO, https://www.uspto.gov/learning-and-resources/fees-and-payment/uspto-fee-schedule (last visited May 26, 2018).

120 Fran Quigley, Making Medicines Accessible: Alternatives to the Flawed Patent System, Health and Human Rights Journal, https://www.hhrjournal.org/2015/11/making-medicines-accessible-alternatives-to-the-flawed-patent-system-2/ (last visited May 26, 2018).

scientists attempt to mimic those drugs to partake in what would be a complete monopoly.[121] This mentality has resulted in over 70% of drugs marketed in the past two decades providing no novel therapeutic value compared to those that were already on the market.[122]

The idea that pharmaceutical companies are largely after the money and consequently are interested in partaking in the profit of the most successful drugs, and the idea that patenting natural products has recently become more difficult may indicate that patents are not the most effective method for protecting the creation of drugs. The goal of healthcare and pharmaceuticals is to help the greatest number of people worldwide. Where certain diseases plague the underprivileged and therefore are of less concern to the public in developed nations, scientists should not be deterred from seeking cures.

In addition, where isolation and purification of natural products may lead to uncertainty of whether the product is patentable, scientists should also not be deterred from attempting these isolations and purifications if the outcome may be novel. The fact that over 70% of patented drugs in the past twenty years have had no new benefit, but there are still untreated widespread diseases should be a major concern for the pharmaceutical industry. This statistic should merit changes in the industry not only nationwide, but worldwide.

Many of the patented drugs may not be derived from naturally occurring substances, and therefore would not be subjected to the two-part test set forth in the USPTO Guidelines. However, where drugs are receiving patents even though they do not provide any additional therapeutic benefit compared to previously existing products, the requirement that pharmaceuticals must be "markedly different" from the naturally occurring substance in either structure or function does not add up. An existing, patented product may be considered just as readily available as a naturally occurring substance. Therefore, if a scientist can change aspects of that patented drug and later receive a patent for a very similar medication himself, why should a scientist who is able to purify or isolate a naturally occurring substance not also be able to receive a patent?

It is true that in *Diamond* the Court held that that a man-made bacterium with "markedly different characteristics from any found in nature" and "having the potential for significant utility" was patentable.[123] However, the Court did not hold that pharmaceuticals or products that were not "markedly different" were not patentable. In fact, Chief Justice Burger specifically cautioned in *Diamond* that the holding must be narrowly interpreted and in this specific case the product was patentable because it met the criteria set for in 35 U.S.C. § 101.[124] The first error is that the USPTO began to apply this holding broadly and seemed to add "markedly different" as an additional criterion to in 35 U.S.C. § 101 from this point forward. The USPTO continued to

121 Id.
122 Id.
123 Diamond, 447 U.S. at 310.
124 Id.

narrow the scope of in 35 U.S.C. § 101 by applying *Mayo Collaborative Services*, *Association for Molecular Pathology*, and *Alice Corporation Pty Ltd.* to this interpretation. These cases were intended to apply to specific key facts, but the USPTO had attempted to expand the holdings to as many cases and patent applications as possible by setting for the Guidelines regularly used by examiners.

A. Trademarks, Copyrights, Trade Secrets, Alternatives?

While much of the focus here has been on patents, there are certainly other means of protecting an individual's intellectual property. Specifically, there are three other types of intellectual property protection: trademarks, copyrights, and trade secrets.[125] However, none of these would feasibly work in protecting pharmaceutical drugs derived from natural products.

First, copyright protections would not be sensible to protect pharmaceutical drug compositions or methods derived from naturally occurring substances. Copyrights are used to protect original authored works.[126] For instance, copyrights may protect literature, music lyrics, software, or other original work.[127] Whether a scientist aims to protect a purified product, the method for isolating a product from a naturally occurring substance, or some other product derived from a substance found in nature, it would not make sense to file an application for a copyright. The subject matter simply does not fall into a copyrightable area.

Next, a trademark would not protect a pharmaceutical drug derived from a naturally occurring substance. A trademark may be a "word, phrase, symbol, or design" that characterizes a product as being from a particular business.[128] Trademarks act to differentiate competing products for the general public.[129] Almost every brand-name product and restaurant and many television channels have distinguishing trademarks. For instance, the orange lightning bolt with the green word "Gatorade" is a trademark. In addition, the yellow arches of the McDonald's "M" is a trademark. Therefore, a trademark may be used to distinguish pharmaceutical companies from one another or different drugs from one another, but they would not provide protection for the chemical compound or the process of creating or isolating that compound. For instance, the yellow word Advil in a specific font on the blue background is a trademark, but such a protection does not protect the physical chemical ibuprofen.

Finally, trade secrets would not be a practical protection to use for any pharmaceutical drugs. Trade secrets include formulas, processes, devices and other information that companies wish to keep secret to prevent other companies from copying. For example, one famous trade secret is the formula for Coca Cola. Another example of a trade secret is the ingredients for special sauces specific to a particular

125 Intellectual Property Protection, UpCounsel, Inc., https://www.upcounsel.com/intellectual-property-protection (last visited May 26, 2018).
126 Id.
127 Id.
128 Id.
129 Id.

restaurant, such as the Chick-fil-a sauce. In this instance, the trade secrets would consist of the particular chemical formal for the drug, the process for isolating a compound from a naturally occurring substance, or the like.

While trade secrets may seem like a valid alternative to a patent and appear to be a valid protection for drugs derived from naturally occurring products, ultimately they are not a reasonable protection for a variety of reasons. One reason why trade secrecy would not be a viable option for protecting the chemical composition or process of creating new drugs is that all pharmaceutical companies must disclose all active ingredients in drugs that are new to the market, as well as the process for making these drugs, to acquire regulatory approval from the Food and Drug Administration (FDA).[130] These disclosures necessarily require that nothing from the chemical composition or process is kept secret. FDA approval is important to ensure that the drug is safe from human consumption. Second, disclosures of composition and process are necessary to ensure to that patients and doctors are aware of what exactly the patient is consuming. Patients may take multiple medications at one time, so the chemical composition of each is necessary to ensure that the medications do not adversely interact with one another and the patent does not consume too much of any particular compound. Furthermore, to make improvements to drugs and advance the pharmaceutical industry, it would be important to know how drugs and made and what they are composed of. If scientists are not aware of what drugs are composed of or how they are made, it would be impossible to conduct research to find more practical ways of obtaining the final product or making the product even better.

Therefore, since copyrights, trademarks and trade secrets would all either be impractical or simply do not apply to the composition or process of creating drugs, patenting such products is the only way to ensure that the intellectual property is protected.

G. Public Policy Concerns

Ultimately, it is important for the intellectual property behind pharmaceuticals to be protected to ensure that individuals are given the benefit they deserve for creating a drug, and also to encourage progress in the pharmaceutical industry. However, with the creation of the Guidelines, some products that may have been patentable in the past may no longer receive patents. Some examiners are interpreting 35 U.S.C. § 101 more narrowly than the writers of the statute intended, and while the effects may not seem that serious in the grand scheme of things, overtime these interpretations may have detrimental effects.

In a time where many individuals struggle to afford necessary medications, it is important to ensure that the medical field is constantly evolving and striving to produce the most economic and effective options for all people world-wide. It is also necessary to ensure that individuals reap the deserved benefits from their efforts to advance the field and create new drugs. If a whole subsection of pharmaceuticals, those consisting or

130 Landau, supra note 14.

comprising of natural products, do not receive the necessary attention to advance that area, this will create a hindrance in achieving these goals. While generic products and cheaper alternatives are clearly desired, if these products were not patentable and did not ensure that the scientists benefitted from their work, the industry would essentially fail. Scientists do not want to put in the time and effort into research where there is no possible chance for a profit. So, while the idea that drugs derived from natural occurring products may not be patentable does not seem like a large concern on its face, and may appear to make the pharmaceuticals more affordable, satisfying the first concern by not creating money-hungry monopolies, it actually works to the opposite effect. With no patents, these products will simply not exist and the potential for revolutionary discoveries is barred altogether.

H. Next Steps

Ultimately, inventors should be granted patents for creating novel and useful products. However, some line must be drawn between obtaining patents inventing new drugs and producing drugs derived from naturally occurring substances. This is determining where this line must be drawn regarding drugs containing or consisting of natural substances, since discoveries are simply not patentable.

Since 35 U.S.C. § 101 and the corresponding case law may clearly be interpreted in vastly different ways regarding to what extent it applies to naturally occurring substances, it may be in the best interest for the federal government to create laws and/or regulations governing pharmaceuticals derived from natural substances. Such laws would put everyone on the same page. Furthermore, it would create blanket rules regarding naturally occurring substances without requiring appeals on a specific case to reach the Supreme Court of the United States to clarify the issue.

Conclusion

The ability to protect one's inventions has a significant effect on the progress made in the pharmaceutical and other medical-related fields. While the Guidelines issued by the USPTO may deter individuals from creating drugs derived from natural substances, it is unclear what the best alternative would be to this approach. It is important to ensure that individuals are not rewarded for mere discoveries of naturally-occurring substances, while at the same time it is critical to safeguard any significant efforts made by scientists to differentiate a product from a similar substance which occurs in nature.

The Guidelines do ensure that individuals are aware of whether their product derived from a natural substance will be patentable before applying for a patent through the numerous illustrations and examples set forth in the Guidelines. However, mere knowledge is not enough to guarantee progress in the field. Knowing that an individual will not receive a patent for his work will have an even greater effect of deterring that individual from performing work in the field than if he is unsure of the outcome. Therefore, it is crucial to ensure that products derived from nature

that may be revolutionary in the medical field are protected. Whether this means that pharmaceuticals and other medical advances should obtain other protections than patents or if the legislature must draft statutes to specifically address this issue is uncertain. However, action must be taken to ensure that cures to diseases, which may come from derivations of products found in nature, continue occur and the field continues to move forward at a rapid pace.

Juvenile Justice Reform in New York: Prosecuting the Adolescent Brain

Cecilia M. Santostefano[1]

Abstract

This Note follows New York's movement for juvenile justice reform, as more research on the adolescent brain emerges. The concept that the adolescent brain differs from the adult brain is relatively new in the legal framework. Juveniles used to be viewed as "miniature adults" and thereby prosecuted as such. Now, due to advances in brain science, research shows juveniles are not as capable of performing many tasks that adults can because of their developmental stage. These tasks include future planning, making complex decisions, and refusing to take part in risky activities if they will gain immediate thrill.

For a state with a reputation for being progressive, New York still implements an arguably archaic practice of prosecuting sixteen- to seventeen-year-olds as adults, despite what the science shows. With a current governor who zealously supports raising the age of adulthood, a debate that has been happening for decades, this Note examines whether the science supports this initiative. This Note concludes with the application of the developments in brain science to changes in the state's approach to punishment, from a punitive to a rehabilitative system.

Introduction

Litigators have relied increasingly on brain science to reduce the jury's perception of their client's culpability - that is, the extent to which they are responsible for the crime they have committed. The argument behind introducing brain science is that some defendants deserve special consideration because they have brains that are impaired in some way, therefore, they should not be punished the same as someone who does not have the same impairment.

Within the criminal justice system, there are many approaches to punishment, but there is a strong commitment to penal proportionality.[2] This means the severity of the punishment should reflect the underlying crime committed because it is the culpability, or wrongfulness, of the offender, in comparison to the culpability of other offenders, that drives the need to punish.[3] A punishment would be considered "undeserved" if it were more severe than a punishment imposed on an offender who committed a more serious crime due to a flaw in proportionality. Impairments, such as brain damage, are mitigating factors that alter society's perception of wrongfulness.[4]

These types of arguments have been especially persuasive in juvenile proceedings, where evidence that the adolescent brain is undeveloped has gained popularity in the

1 Syracuse University College of Law, Juris Doctor 2018. The author would like to extend a special thank you to Professor Lauryn Gouldin for her guidance and encouragement throughout the development of this Note.

2 Laurence Steinberg, The influence of neuroscience on US Supreme Court decisions about adolescents' criminal culpability, nature (June 12, 2013), http://www.nature.com/nrn/journal/v14/n7/pdf/nrn3509.pdf.

3 Id.

4 See Roxanne Palmer, Brains on Trial: Neuroscience Has limited Use in The Courtroom, Scientists Say, International Business Times, (Sept. 27, 2013, 4:52 PM), http://www.ibtimes.com/brains-trial-neuroscience-has-limited-use-courtroom-scientists-say-1412118.

courtroom. This evidence is changing our perception of wrongfulness. The juvenile justice system was separated from the adult system in the late 19th century, long before the advent of modern neuroscience, because juveniles and adults are fundamentally different. Additionally, brain science has driven other policy changes for juvenile justice, including the raise the age debate in many states. In early 2016, President Barack Obama prohibited the implementation of solitary confinement as a means of incarceration for juvenile offenders in federal prisons.[5] The former President cited the case of a sixteen-year-old[6] from New York City who was sent to Rikers Island to await his trial in solitary confinement for almost two years.[7] Mr. Obama cited to research that shows the detrimental effects of solitary confinement on a young mind, including depression, alienation, withdrawal, a reduced ability to interact with others and the potential for violent behavior.[8] He added that some studies indicate that it can worsen existing mental illnesses and even trigger new ones.[9]

Part I of this Note will explain the basic differences between juveniles and adults. It will provide an overview of the landmark Supreme Court cases that acknowledged these differences and track the shifts between rehabilitative and punitive models of punishment in the system. Part II will discuss whether this idea of lesser culpability is justified. Specifically, it will follow the momentum of the Raise the Age debate in New York. It will consider Governor Cuomo's initiatives to raise the age of adulthood as well as the actions of neighboring state Connecticut, which has historically had a similar approach to punishment as New York prior to electing to raise the age in 2012. Finally, it will address the criticisms of brain science, including whether its seeming support for raising the age of adulthood only supports drafting an arbitrary line of adulthood.

I. Why do we distinguish between juveniles and adults?

Treating young people differently from adults is a relatively new concept in the legal realm. Before this movement, juveniles were viewed as "miniature adults" and were tried and sentenced the same way adults were.[10] Lawmakers noticed two issues with the current system. First, there was a large increase in criminal activity among juveniles and adolescents.[11] Second, young offenders that were institutionalized alongside adults were entering a lifestyle of criminal behavior upon release.[12] In response, the juvenile justice system was established in Cook County, Illinois in 1899.[13] The objectives behind

5 Michael D. Shear, Obama Bans Solitary Confinement of Juveniles in Federal Prisons, N.Y. Times, (Jan. 25, 2016), http://www.nytimes.com/2016/01/26/us/politics/obama-bans-solitary-confinement-of-juveniles-in-federal-prisons.html.

6 Id. (Mr. Obama referred to the case of Kalief Browder, who was accused of stealing a backpack. Mr. Browder was released from prison at the age of twenty-two without having a conviction. Following his release from Rikers Island in 2015, he took his own life in his home in the Bronx. Before his death, Mr. Browder was deposed three times regarding his previous suicide attempts while in solitary confinement after watching fellow adolescent offenders attempt suicide).

7 Id.

8 Id.

9 Id.

10 The juvenile justice system was founded on the concept of rehabilitation through individualized justice, National Report Series: Juvenile Justice Bulletin, (Dec. 1999), https://www.ncjrs.gov/html/ojjdp/9912_2/juv1.html.

11 Id.

12 Id.

13 Id.

creating a separate system were to keep adolescents out of adult prisons, limit their exposure to criminal activity and poor role models, and provide interventions that were aimed at pushing them toward more positive outcomes.[14]

Early juvenile institutions were primarily educational in aiming to rehabilitate the youthful offenders; teaching them the impact of crime as well as other practical skills so that they may make meaningful contributions to society upon release.[15] Rehabilitation is a utilitarian rationale for punishment.[16] Under this philosophy, offenders should be punished in order to discourage the commission of similar crimes in the future.[17] Utilitarian societies aim to maximize the happiness of society, therefore the amount of punishment necessary to prevent future crime will be implemented under this model.[18] There is an aspect of proportionality - the severity of the punishment should reflect the underlying crime committed.[19] Over one century later, psychiatrist Peter Ash of Emory University continues to support the primary goal of rehabilitation for juveniles. He explained that even if a fourteen-year-old murderer is held morally responsible for the crime, he will have matured by the time he is eighteen, and in the meantime, he may be more amenable to rehabilitation than an adult murderer is.[20] Although juvenile courts appear to have been designed to focus on giving the offender what he needs to become a productive member of society, many states abandoned the rehabilitative model by the end of the 20th century.

In the 1970s, members of society became aware of the increase in juvenile crime rates and they wanted to see criminals punished and locked up, regardless of their age; they demanded to be protected from crime.[21] As the transition to a punitive model was underway to deter future crime, societies employed incapacitation, which did not provide juveniles an opportunity to "grow out" of their criminal activity as the previous rehabilitative model had.[22] To apply this "get tough" mentality, states passed increasingly punitive laws.[23] Some laws implemented mandatory sentences and some laws excluded certain classes of offenders from juvenile court.[24] Many states began to allow sixteen- and seventeen-year-olds to be tried in the adult criminal justice system; New York is one of two states that still permits this.[25] This topic will be revisited in Part II in terms of the Raise the Age debate.

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14 Edward P. Mulvey & Anne-Marie R. Iselin, Improving Professional Judgments of Risk and Amenability in Juvenile Justice, Nat'l Inst. of Health, (Mar. 2, 2012), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3586246/.

15 See National Academic Press, Juvenile Crime, Juvenile Justice 154 (2001), https://www.nap.edu/read/9747/chapter/7#207.

16 Id.

17 Id.

18 Id.

19 Id.

20 Malcolm Ritter, Experts link teen brains' immaturity, juvenile crime, ABC News, http://abcnews.go.com/Technology/story?id=3943187 (last visited May 20, 2018).

21 National Report Series, supra note 10.

22 Michael S. Phelps, Rehabilitation in the Punitive Era: The Gap between Rhetoric and Reality in U.S. Prison Programs, Nat'l Inst. of Health, (Sept. 4, 2013), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3762476/.

23 Id.

24 Id.

25 Leticia Miranda, New York Still Charges Teenagers as Adults. Will Cuomo's Bill Change That? ProPublica, (Mar. 26, 2015, 9:32 AM),https://www.propublica.org/article/new-york-still-charges-teenagers-as-adults.-will-cuomos-bill-change-that.

Tensions elevated between the earlier rehabilitation-oriented system and the increasingly punitive system and this tension remains today, depending on which of the fifty-one juvenile justice systems within the United States you are looking at and the approach to punishment it adopts. Since each state had the discretion to impose penalties on juvenile offenders, inconsistencies formed in the way juveniles were treated. However, the one commonality across the states was the need to treat juveniles and adults differently.

A. Brain science supports the recent shift back to a rehabilitative model

Brain science is used for many things, including predicting behavior, detecting emotions, and understanding free will.[26] In studying the brain from birth to adulthood, scientists have been able to track differences in the brain between adolescence and adulthood.[27] With an increased understanding of the young brain, we are able to see the vulnerabilities of youth.[28] Since the brain is still developing during adolescence, it responds differently than the adult brain to stimuli.[29] This causes youths to be more susceptible to many behaviors of which adults are not at-risk."[30] Those behaviors vary from violence to addiction.[31] This emerging research has made its entrance into the courtroom over the last few decades and in the early 21st century, the Supreme Court used recent scientific developments to further differentiate between juveniles and adults. The science will be discussed first then it will be applied to the Supreme Court decisions.

1. The juvenile and adolescent brain[32]

There are four notable structural differences between the juvenile brain and the adult brain. First, there is a decreased amount of grey matter in prefrontal regions of the brain in the juvenile brain as opposed to the adult brain. The amount of grey matter is reflective of capacity for synaptic pruning. During development, neurons make numerous connections to other cells. As an individual develops, some of those connections become unused and are eliminated as a result. This process of eliminating unnecessary connections is called synaptic pruning. The process of synaptic pruning occurs primarily during early adolescence, where major improvements in basic cognitive abilities and logical reasoning are recognized. Additionally, the more grey matter present in the decision-making part of the brain, the better the ability to evaluate rewards and consequences.

Second, important changes in activity involving the neurotransmitter dopamine occur during early adolescence, especially during puberty. There are substantial changes in the density and distribution of dopamine receptors in pathways that connect the limbic

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26 The Teen Brain: Still Under Construction, nat'l inst. of mental health, (2011), https://infocenter.nimh.nih.gov/pubstatic/NIH%2011-4929/NIH%2011-4929.pdf.

27 Id.

28 Id.

29 B.J. Casey, Rebecca M. Jones, & Todd A. Hare, The Adolescent Brain, Nat'l Inst. of Health, (July 21, 2008), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2475802/pdf/nihms56148.pdf.

30 Id.

31 Id.

32 The information for the following section has been excerpted from: Laurence Steinberg, Should the Science of Adolescent Brain Development Inform Public Policy?, 28 issues in sci. & tech. (2012), http://issues.org/28-3/steinberg/.

system to the prefrontal cortex. These areas process emotions as well as rewards and punishments and perform high-level functions, respectively. During the early years of adolescence, there is more dopaminergic activity in these areas of the brain than any other point of an individual's development. Since dopamine plays a critical role in how humans experience pleasure, these changes have important implications for the engagement in sensation- and thrill-seeking behaviors.

Third, there is an increase in white matter in the prefrontal cortex during adolescence. It is responsible for relaying communications between parts of the brain. During late adolescence and early adulthood, a process called myelination continues. This process allows for more efficient neural connections between the prefrontal cortex and other parts of the brain. When a connection is more efficient due to myelination, functions like planning ahead, weighing risks and rewards, and making complicated decisions are better regulated. Again, this process of myelination occurs well into early adulthood, unlike the process of synaptic pruning, which occurs mostly during early adolescence.

Finally, there is an increase in the strength of connections between the prefrontal cortex and the limbic system, which has previously been established as being responsible for complex behaviors like future planning and decision-making and emotions, respectively. This change is especially important for emotion regulation and it occurs well into late adolescence, just as myelination does. It is facilitated by increased connectivity between regions of the brain responsible for processing emotional information as well as self-control. These connections allow different brain systems to communicate with each other more effectively. For example, if you were to compare a thirteen-year-old's brain to the brain of a young adult, there would be a much more extensive network of myelinated cables connecting brain regions in the young adult's brain due to myelination and stronger connections between different brain regions. When the above three characteristics of the adolescent brain are combined, what results is an individual who operates to fulfill a thrill-seeking desire, due to high dopamine levels, without the capacity to control impulses and properly assess risk.

Adolescence is not just a time of tremendous change in the brain's structure, it is also a time of important changes in how the brain operates. Functional magnetic resonance imaging (fMRI) reveals three ways in which the adolescent brain functions differently than the developed adult brain. First, when connections between brain systems that control a behavior become strengthened over the course of adolescence and early adulthood, tasks that require self-control are actually calling on more parts of the brain to perform one given task. Employing a wider network of brain regions may make self-control easier to exercise because the brain is distributing the work across multiple areas of the brain rather than exhausting a smaller number of regions.

Second, there are important changes in the way the brain responds to rewards. Upon examining a brain scan of an individual being shown something rewarding, such as piles of coins or pictures of happy faces, usually the reward centers of the brain are activated more in adolescents as opposed to in adults. This means the reward centers of the brain are experiencing a heightened sensitivity to an anticipated reward and this

motivates the adolescent to engage in acts when the potential for pleasure is high, even if the acts are risky behaviors or maybe even criminal. Additionally, studies have confirmed this hypersensitivity to reward is particularly pronounced when adolescents are with their friends.

A third change in brain function over the course of adolescence involves increases in the simultaneous involvement of multiple brain regions in response to arousing stimuli, including emotions. Prior to adulthood, there is fewer communication between the brain systems that regulate rational decision-making and those that regulate emotional arousal. For example, during adolescence, feelings are less likely to be regulated by brain regions involved in controlling impulses, planning ahead, and comparing the costs and benefits of alternative courses of action. As an individual develops, we see an improved impulse control as a result of these stronger communications between different brain systems. As brain science developed, lawyers started to introduce the evidence into the juvenile justice system.

2. The Supreme Court and the rehabilitative model

The discoveries about the fundamental differences between juveniles and adults drove the Supreme Court away from the punitive approach the states had embraced, and back to a rehabilitative model of punishment. At the time, the number of imprisoned youth under the age of eighteen was very high.[33] Legislation relaxed the requirements for transferring young offenders from juvenile courts to adult criminal courts, and this increased likelihood that a juvenile be incarcerated in an adult facility.[34] Criminal courts were giving little consideration to the nature of adolescence and the characteristics that make juveniles very different from adults.[35] Courts also had little to no discretion in charging young offenders in that the focus was on the nature of the crime, not the characteristics of the offender.[36]

It was at this time that research emerged suggesting youth are not similar to adults in many ways that affect the assessment of culpability.[37] For example, youths have a weakened ability to understand the consequences of their actions.[38] The Court considered these inherent differences present in juveniles to be a mitigating factor in terms of blameworthiness.[39] The principal cases in which the Court addressed this concept are *Roper v. Simmons*, *Graham v. Florida*, and *Miller v. Alabama*. With each case, the Court considered new aspects of brain science that encouraged rehabilitation as the primary goal in the juvenile justice system.

The *Roper* Court emphasized three fundamental differences between juveniles and adults that establish the reason youthful offenders cannot be classified among the

33 Juvenile Justice: Rethinking Punitive Approaches To Addressing Juvenile Crime, U. of Pitt., (Jan. 2009), http://ocd.pitt.edu/Default.aspx?webPageID=248.
34 Id.
35 Id.
36 Id.
37 Id.
38 Id.
39 Steinberg, supra note 2.

worst offenders deserving of capital punishment.[40] First, juveniles are susceptible to immature and irresponsible behavior, so their conduct is not as "morally reprehensible" as that of an adult.[41] Second, juveniles have a certain vulnerability and lack of control over their immediate surroundings.[42] Third, the personality is still developing, therefore it is difficult to conclude that even a heinous crime committed by a juvenile is evidence of irretrievably depraved character.[43] The first two reasons will be revisited in Part II and compared to recent developments in brain science in terms of the raise the age debate. In *Miller*, the Court mentioning adolescent immaturity in higher-order executive functions such as impulse control, planning ahead, and risk avoidance, more crucial aspects of the culpability determination.[44]

In determining juveniles cannot be placed in the category of offenders whose extreme culpability makes them "the most deserving of execution,"[45] the Court continued shifting away from a punitive model and toward a rehabilitative model. In *Graham*, Justice Kennedy commented:

> Life in prison without the possibility of parole gives no chance for fulfillment outside of prison walls, no chance for reconciliation with society, no hope. Maturity can lead to that considered reflection which is the foundation for remorse, renewal, and rehabilitation. A young person who knows that he or she has no chance to leave prison before life's end has little incentive to become a responsive individual.[46]

The opinion goes on to say the Court cannot overlook heinous crimes committed by juvenile, but having a categorical rule barring imposition of the death penalty on an offender under eighteen is not arbitrary; it serves a purpose.[47] The purpose is to create an effective system tailored to the needs of juveniles because the recent developments in brain science further supported the implementation of two systems: one fit for adults and one fit for juveniles. The Court, again, gave great weight to lack of "behavior control" that had been emphasized in *Roper*.[48] With a brain still developing, a juvenile is less able to control impulses, to make rational decisions, and is generally less mature than someone in his mid-twenties, whose brain has reached a more complete level of cognitive development.[49]

There are, however, many criticisms of using this science. A court may reject the science for a number of reasons. First, it gives too much deference to the court in its

40 See Roper v. Simmons, 543 U.S. 551 (2005).
41 Thompson v. Oklahoma, 487 U.S. 815, 835 (1988).
42 Stanford v. Kentucky, 492 U.S. 361 (1989).
43 See Thompson, 487 U.S. 815 at 835.
44 Miller v. Alabama, 567 U.S. 460, 513 (2012).
45 Atkins v. Virginia, 536 U.S. 304, 319 (2002).
46 Graham v. Florida, 560 U.S. 48, 77 (2010).
47 Id. at 90.
48 Elizabeth Scott et al., Models for Change: Systems Reform in Juvenile Justice, Columbia U., Sept. 2015 at 9, http://www.jlc.org/sites/default/files/publication_pdfs/The_Supreme_Court_and_the_Transformation_of_Juvenile_Sentencing%20(1).pdf.
49 Steinberg, supra note 32.

construction of mens rea.[50] Second, there are some cases where a juvenile demonstrates high levels of planning and forethought, whereas the science suggests juveniles lack such capacities.[51] Finally, the courts that did incorporate brain science into their opinions only did so to reinforce the decision they already reached before looking to the science.[52] Additionally, as it was said in Roper, "science cannot gauge moral culpability" but can "shed light" on attributes legally relevant to that determination."

A large portion of the neuroscientist's brief in *Roper v. Simmons* focused on the potential impact prosecuting adolescents has on the justice system's approach to punishment.[53] The science brief argued executing adolescents would not serve the instrumental end of retribution.[54] When considered broadly, that is a compelling argument. It is the retributive rationale that the individual operates under free will. Therefore, an act of crime is the result of the individual's desire to engage in the criminal behavior. When it comes to juveniles, however, research shows the portion of the brain responsible for future planning, complex decision-making, and weighing rewards and consequences for behavior is significantly underdeveloped in comparison to that of an adult. A person that does not have the capacity to make informed decisions the way an adult does, essentially cannot be culpable for her actions, regardless of criminality.

A. How does this influence our views of culpability?

The Roper, Graham, and Miller decisions recognized the biological differences between juveniles and adults, even in those individuals who commit especially heinous crimes. HOW DID EACH CASE MOVE THE SYSTEM INTO A MORE REHABILITATIVE MODEL? sioned ae adults.the 1970s, it was not There are numerous reasons why a litigator would want to bring brain science into the courtroom. Putting aside evidence of diminished capacity due to mental illness or a specific impairment, neuroscience evidence goes to the blameworthiness of a defendant, particularly a juvenile offender. During litigation, an expert witness is typically called to testify about the juvenile offender's inability to recognize the wrongfulness of her conduct.[55] The expert will then testify about the operation of the brain and its capacity in order to support the argument that juveniles are immature in judgment and decision-making.[56] This goes to blameworthiness and showing that the juvenile is less culpable than an adult. Professor Elizabeth Scott of Columbia Law School said, "Brain research — and even brain-imaging technology — has had an impact in changing people's views. There is something about

50 Terry E. Maroney, Adolescent Brain Science after Graham v. Florida, Notre Dame L. Rev. 86, 765, 768 (2011),

DELETED LINK

51 Id. at 769.

52 Id.

53 Aliya Haider, Roper v. Simmons: The Role of the Science Brief, Ohio State J. of Crim. L. http://moritzlaw.osu.edu/students/groups/osjcl/files/2012/05/Haider-PDF-04-04-06.pdf.

54 Id.

55 Bethany Shechtel, Using Neuroscience in a Juvenile Criminal Case, A.B.A., (Aug. 2014), http://www.americanbar.org/publications/gpsolo_ereport/2014/august_2014/using_neuroscience_in_a_juvenile_criminal_case.html.

56 Id.

colorful pictures of the brain that seems to impress people" on the success of brain research in the courtroom.[57] When they can actually see the differences in adolescent brains, they can believe it."[58]

This is not a new tactic, but recent developments and more advances in science have made studying the brain less taboo. Not only can images of the brain be seen, but new advances in technology allow the images to be three-dimensional or printed in color activity in the brain is detected. These noninvasive scans provide convincing evidence when brought into the courtroom. Recent brain research in particular has demonstrated that kids are more impulsive than adults and have a reduced capacity to appreciate the consequences of their actions. This is evidenced in studies that show the brain does not fully develop until the mid-twenties.

Supporters of the science will argue it is reliable and it is a gauge of culpability. Recidivism rates for offenders between the ages of eighteen and twenty-four are astoundingly high. Seventy-eight percent of eighteen to twenty-four-year-olds that are released from prison are rearrested. Half of them are incarcerated at least one more time in their lifetime. As juveniles, their brains are still developing. As we have seen, the portions of the brain that are not developed are not merely the portions responsible for memory creation or balance; it is the frontal lobe. The frontal lobe is primarily responsible for critical thinking, decision-making, and impulse control. Therefore, supporters of the science argue that there are major flaws in the way states are prosecuting juveniles. Supporters pose the question: how can someone whose brain is not fully developed possess the requisite intent to commit such a serious crime?

While that is a fascinating question, a major criticism includes the question of where to draw the line. If a brain does not fully develop until an individual is twenty-five years old, are supporters of the science advocating for an age of adulthood to be set at twenty-five? Are supporters of this increase advocating for a nationwide standard? This is unclear and the science does not necessarily help to draw the line. If you look to other things that have an age requirement, such as enlisting in the military, voting, consuming alcohol, or purchasing tobacco, those requirements range from eighteen to twenty-one. Does brain science have no effect on those standards? A popular argument in opposition to lowering the legal drinking age from twenty-one to eighteen is that alcohol interferes with development of the young adult brain's frontal lobe, which is essential for functions like emotion regulation, planning, and organization.[59] When alcohol consumption interferes with this early adult brain development, the potential for chronic problems such as violence, dangerous risk-taking behavior, and reduced decision-making ability, increases.[60] Turning back to raising the age of adulthood in the criminal context, a dominant criticism is that people do not automatically become adults on their eighteenth birthday. Brain development is a process, and a gradual one at that. The law must recognize that the

57 Criminal Justice and the Juvenile Brain, Columbia Law School, (July 10, 2013), https://www.law.columbia.edu/media_inquiries/news_events/2013/july2013/scott-brain-research.

58 Id.

59 Should the Drinking Age Be Lowered from 21 to a Younger Age?, ProCon, http://drinkingage.procon.org (last visited May 18, 2018).

60 Id.

change is not immediate and it must find a way to incorporate the science into the justice system; adulthood is a difficult line to draw. That idea has been acknowledged for at least a decade since the *Roper* case.

B. Preventing future crime

The difference between juveniles and adults may broadly and developmentally be the difference in age, but more specifically, the differences that exist are that in impulse control, decision-making, and motivation. Some states, including New York, generated tougher juvenile justice reforms in an attempt to reduce juvenile crime rates.[61] On average, the studies that examined the impact of tougher juvenile justice reforms on juvenile crime rates found that measures such as state laws that make it easier to try young offenders as adults do not lead to lower juvenile crime rates.[62] The states that adopted tougher reforms did not anticipate unchanged crime rates. For example, in New York the arrest rates after tougher juvenile justice laws were enacted were no different before the state took a more punitive approach.[63] The research suggests this outcome exists because young offenders, regardless of their age, appear unresponsive to the increased risk of being incarcerated.[64] For example, several studies report that adolescents transferred to criminal courts subsequently commit violent crime at higher rates than adolescents whose cases were tried in juvenile court systems.[65] This suggests a punitive approach may exacerbate the problem.

Instead of implementing tougher reform, states should emphasize early education. States should provide easily accessible programs for adolescents that target the characteristics and parts of the brain that are still developing. For example, adolescents lack the same capacity as adults, developmentally, to make complex decisions and delay reward if they can obtain an instant gratification. Educational programs should focus on decision-making skills and the ability to weigh the costs and benefits of feelings of pleasure to consequences.

Additionally, states should focus on rehabilitation because brain science demonstrates adolescence is a time of greater amenability. Research suggests the most effective community-based programs are those that promote positive family interactions.[66] Governor Cuomo has implemented a rehabilitative model with the "Close to Home" initiative in New York, where keeping youths closer to their families is a core principle of the state's juvenile justice program.[67] This reform was enacted in 2011 and it is designed to keep adjudicated youth close to their families and community.[68] Similar

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61 Patrick Griffin et al., Trying Juveniles as Adults: An Analysis of State Transfer Laws and Reporting, U.S. Dep't of Just., (Sept. 2011), https://www.ncjrs.gov/pdffiles1/ojjdp/232434.pdf.
62 Id.
63 Id.
64 Id.
65 Id.
66 Griffin, supra note 61.
67 Close to Home Initiative, N.Y. Off. of Child. & Fam. Servs., http://ocfs.ny.gov/main/rehab/close_to_home/ (last visited May 18, 2018).
68 Id.

programs, like group homes or sending a therapist to perform home visits to improve family functioning, reduce recidivism rates and out-of-home placement rates for a range of troubled youth while helping parents learn to effectively handle their children's behavior problems, including poor school performance and their associations with deviant peers, which may lead to future crime.[69] While research shows these mechanisms are effective in preventing delinquency and reducing recidivism, studies suggest only five percent of eligible youth nationwide use these programs.[70] This is due to the ongoing gap between research and policy.

II. Policy Implications

Changes in laws cannot be equated with changes in practice. There are many factors that are standing in the way of changing, and possibly improving, the juvenile justice system in the United States. Those factors include the costs of incarceration, the overcrowding that follows from harsh sentencing, and the little purpose incarceration serves without rehabilitation or treatment programs, in terms of recidivism.

The Raise the Age Debate

The age of adulthood differs greatly across the United States. In North Carolina, juvenile jurisdiction may be waived for individuals as young as thirteen years old for particular crimes, like felonies.[71] New York is currently one of two states in the country that automatically prosecutes sixteen- and seventeen-year-olds as adults; the other state being North Carolina.[72] This age of adulthood is lower than many neighboring states, like Connecticut, who raised the age of adulthood to eighteen within the last decade. The process Connecticut underwent will be discussed in the next part of this section.

After reaching the age of adulthood in a state, a juvenile will no longer be subject to the jurisdiction of the juvenile justice system.[73] If other statutory criteria are met, juvenile court judges may waive jurisdiction over certain cases and transfer them to adult criminal court.[74] Judges may waive jurisdiction for any number of reasons, including the seriousness of the charged crime, an extensive juvenile record, or if the juvenile is close to the age of adulthood.[75]

The Raise the Age debate has recently picked up more momentum. Could this be due to developments in brain science lending support to this movement? In New York, Governor Cuomo has been particularly vocal about his views on the juvenile justice system in New York, calling the juvenile justice laws "outdated" in 2014.[76] In that same

69 Griffin, supra note 61.
70 Id.
71 Tamar R. Birckhead, North Carolina, Juvenile Court Jurisdiction, and the Resistance to Reform, N.C. L. Rev. 1444, 1452 (2008), https://ncdps.s3.amazonaws.com/s3fs-public/div/JJ/Policies/86_NC_L_Rev_1443(1).pdf.
72 Miranda, supra note 25.
73 Supra note 15.
74 Id.
75 Id.
76 Cuomo calls for raising the age of criminal responsibility, Politico, (Jan. 8, 2014, 6:55 PM), http://www.politico.com/states/new-york/albany/story/2014/01/cuomo-calls-for-raising-the-age-of-criminal-responsibili-

2014 speech, the governor cited a statistic from the governor's office that in 2012, almost 40,000 youths were tried as adults in New York State, and of them 2,700 were sent to adult jail or prison.[77] It did not surprise many that Governor Cuomo spoke openly about his position regarding the age of adulthood in New York State, as he has maintained a progressive platform since he took office in 2011.[78] Governor Cuomo is vocal about his intention to raise the age of adulthood. In early March of 2015, the governor initiated a campaign rally in support of raising the age of adulthood in New York.[79] Id.uring early adolescence.lination occurs well into early adulthood, unlike the process of synaptic pruning, which occurs mostlIn this report, the governor states "Under New York's current age of criminal responsibility, thousands of troubled kids are being relegated to the adult prison system every year, where they almost certainly face a future of violence and diminished opportunity."[80] He follows with "That must change."[81] He believes by raising the age those misguided and troubled teenagers he referred to above would be afforded juvenile support services that they need to turn their lives around.[82] This in turn will improve public safety by reducing the likelihood that they will commit crimes in the future, which is known as recidivism.[83] In that campaign, he cited to many statistics from the governor's office, including that juveniles in adult prisons are five times more likely to be sexually assaulted, two times more likely to be injured by prison staff, and eight times more likely to commit suicide than their counterparts in designated juvenile facilities. [84]

By raising the age and implementing common-sense measures that help young offenders get back on track through means other than imprisonment, New York can reduce crime, recidivism and costs to the state. Furthermore, failing to raise the age will pose a continued threat to public safety, as youth processed as adults have 26 percent higher likelihood of re-incarceration than youth processed as juveniles. Taken from his commentary from May of 2015, Governor Cuomo says:

> We are relegating hundreds of teenagers each year - mostly young men of color - to an abusive prison environment that makes them more likely to commit crimes in the future. That is not only an injustice; it is an injustice that compromises public safety, and we must make a change. It's time for the legislature to raise the age.[85]

His proposal has already won over support from the state's top prosecutor. An argument made in support of this movement is made by Kathleen Rice, a District

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ty-010347.

77 Id.

78 Id.

79 Governor Cuomo Launches Campaign Rallying Support to "Raise the Age" in New York, N.Y. Off. of Governor, (Mar. 9, 2015), https://www.governor.ny.gov/news/governor-cuomo-launches-campaign-rallying-support-raise-age-new-york.

80 Id.

81 Id.

82 Id.

83 Id.

84 Id.

85 Governor Cuomo Calls on Legislature to Raise the Age of Criminal Responsibility This Session, N.Y. Off. of Governor, (May 28, 2015), https://www.governor.ny.gov/news/governor-cuomo-calls-legislature-raise-age-criminal-responsibility-session.

Attorney in Nassau County.[86] She says, "what we are doing by treating these kids as adults is putting them in a potential cycle of recidivism."[87] Note that this is a historic concern that sparked the reform of the justice system to incorporate a separate juvenile system to begin with. Another argument in support of raising the age of adulthood in New York is made by Gabrielle Horowitz-Prisco of the Correctional Association of New York.[88] She notes, "it's a myth that prosecuting kids as adults promotes public safety."[89] Nationwide research from the last ten years shows juvenile transfer does not hinder crime, but actually promotes recidivism in some cases.[90] This follows from Kathleen Rice's previously referenced statement regarding a cycle of recidivism. An increase in recidivism harms public safety rather than promoting it.[91]

Some states acknowledge the risk recidivism poses on public safety and have taken action to prevent any harm. For example, New York is one of twenty-five states with laws that allow a juvenile's attorney to petition the adult criminal court to transfer the case to juvenile court under certain circumstances.[92] This mechanism is called a reverse waiver.[93] The circumstances considered include a minimum age, a specified type or level of offense, a sufficiently serious record of previous delinquency, and whether the juvenile court has already had an opportunity to determine the suitability of the transfer to criminal court.[94] However, this tactic to cushion the effect of recidivism has two large disadvantages. First, youths who lack economic resources are not likely to have the necessary legal assistance to seek a reverse waiver.[95] Second, due to the deadline for which a petition must be submitted to the court and the fact that the burden rests on the youth, legal representation is vital to the youth's success.[96] Although many states have implemented reverse waivers or an equivalent, the disadvantages diminish the effectiveness in lowering recidivism.

Whatever the case, this debate is controversial. Consider the most heinous crime. Whatever meaning you attach to the word heinous, whether it be an act of terror, sexual assault, or murder. Now imagine the perpetrator is a fifteen-year-old boy. Do you excuse him of his actions merely because of his age? It is not uncommon that his attorney will

86 Glenn Blain, Cuomo aims to hike age of teens tried as adults as GOP balks, prosecutor praises, N.Y. Daily News, (Jan. 9, 2014, 9:28 PM), http://www.nydailynews.com/news/crime/cuomo-aims-hike-age-teens-adults-article-1.1571625.

87 Id.

88 Id.

89 Id.

90 More Harm Than Good: How Children are Unjustly Tried as Adults in New Orleans, SPLC, (Feb. 17, 2016), https://www.splcenter.org/20160217/more-harm-good-how-children-are-unjustly-tried-adults-new-orleans.

91 Id.

92 Griffin, supra note 61.

93 N.Y. Crim. Proc. L. §§ 180.75, 210.43 (2016).

94 Katherine Lazarow, The Continued Viability of New York's Juvenile Offender Act in Light of Recent National Developments, 57 N.Y.L. Sch. L. Rev. 595, 608-9 (2012-2013), http://www.nylslawreview.com/wp-content/uploads/sites/16/2013/03/Lazarow.pdf.

95 Preston Elrod, Juvenile Justice: A Social, Historical, and Legal Perspective 229 (2014), https://books.google.com/books?id=ZZstAAAAQBAJ&pg=PA229&lpg=PA229&dq=are+reverse+waivers+effective&source=bl&ots=CNXzOr6HII&sig=CLRQbYUXI1n6VEprjfxpR1zU5V4&hl=en&sa=X&ved=0ahUKEwjZwe7u-v7RAhXFzRoKHSroBMEQ6AEIMTAD#v=onepage&q=are%20reverse%20waivers%20effective&f=false.

96 Id.

argue he should be protected and that the science shows his adolescent development prevents him from a certain degree of culpability. His attorney will argue for a decreased sentence even though the charged crime is a particularly heinous crime and a behavior that the average individual would not engage in. The "incarceration should be the last resort" argument disappears for many people. Many people want to see this perpetrator punished, severely, regardless of the fact that he is a child. Members of society fall on either side of the fence, and the science does not provide a clear answer as to what to do. The science is not about innocence or guilt. Rather, it is about the degree of culpability and the amount of blameworthiness that can be attributed to an individual.

Does the science support raising the age?

While many states felt a punitive approach was the appropriate response to the increased crime rates among juveniles beginning in the 1970s, it became less suitable as scientific developments continued to reveal significant cognitive differences between juveniles and adults. States that prosecuted sixteen- and seventeen-year-olds as adults at the time the "get tough" mentality prevailed, like Connecticut, have changed their position and raised the age of adulthood to eighteen.[97] Continuing with Connecticut, before the age of adulthood was raised to eighteen, the state commissioned a study and found up to seventy five percent of teenagers sent to the adult system were receiving no rehabilitative services.[98] The study showed the young people that were prosecuted as adults were more likely to reoffend for more serious crimes than their peers prosecuted in juvenile court.[99] Additionally, youth in adult facilities were at high risk for suicide and assault.[100]

To make this legislative change in the interest of public safety and of protecting young people[101], a five year planning and implementation period pursued before the policy was fully implemented in 2012.[102] Abby Anderson, the executive director of the Connecticut Juvenile Justice Alliance, who spearheaded the campaign, said the process was a long one, and started with convincing enough people to get onboard.[103] In early 2014, studies revealed more than 20,000 sixteen- and seventeen-year-olds benefited

97 Raised the Age Connecticut, Raise the Age CT, http://www.raisetheagect.org/index.html (last visited May 18, 2018).

98 Jacqueline Rabe Thomas & Mark Pazniokas, Malloy: Raise the age for juvenile justice system to 20, CT Mirror, (Nov. 6, 2015), http://ctmirror.org/2015/11/06/malloy-raise-the-age-for-juvenile-justice-system-to-20/.

99 Raise the Age, supra note 97.

100 Id.

101 Richard Mendel, Juvenile Justice Reform in Connecticut: How Collaboration and Commitment Have Improved Public Saftey and Outcomes for Youth, Just. Pol'y Inst., 15, http://www.njjn.org/uploads/digital-library/Juvenile_justice_reform_in_CT-collaboration-commitment_JPI_Feb2013.pdf (The Connecticut Juvenile Justice Alliance began a targeted media campaign that quickly gained momentum following the death of David Burgos. Burgos, a seventeen-year-old who struggled with bipolar disorder and attention deficit hyperactive disorder (ADHD), took his life in 2005 in his prison cell at Manson Youth Institute, which is a facility for offenders under the age of twenty-one. He was sent to Manson because, as an adult, he legally refused the services that were a condition of his release on parole).

102 Supra note 97.

103 Roxanna Asgarian, Connecticut a Model for New York to Raise the Age of Criminal Responsibility, Juvenile Just. Info. Exchange, (Mar. 26, 2014), http://jjie.org/2014/03/26/connecticut-a-model-for-new-york-to-raise-the-age-of-criminal-responsibility/.

from the rehabilitative services and greater safety of the juvenile justice system.[104] In terms of public safety, the youth crime rate dropped in the state of Connecticut, but this was also consistent with the national trend.[105] Older adolescents had lower recidivism rates and showed other signs of being more successful in juvenile programming than youth under the age of sixteen.[106] Generally, the plan has been amended since its initial implementation and the number of new cases did not reach the planners' projections.[107]

At first glance it might appear that raising the age of adulthood is the just action to take. Since the brain is not fully developed until a person is in her mid-twenties, setting the age of adulthood at sixteen seems unsettling. When looking to what the science demonstrates, it is not only the portion of the brain that is responsible for impulse control, aggression, emotions, and risk-taking behaviors that are susceptible to further growth after one's teenage years, but the parts of the brain that control reactions to stressful situations, vulnerability to peer pressure, and one's disposition to focus on and overestimate short-term payoffs and underplay longer-term consequences and overlooking alternative courses of action are also developing until the mid-twenties.[108] Those aspects of one's behavior become very relevant to crimes that require a certain mens rea, or intent, because if one can establish the intent was not there, the mens rea element of the crime cannot be proven. However, the argument in support of diminished culpability faces numerous criticisms, one of which is the arbitrary definition of adulthood.

Raising the age requires the legislature to distinguish a point of adulthood. One criticism is that people are skeptical to draw a line between someone who is in control of his brain and someone whose brain is driving his behavior because, as humans, we believe in volition - free will.[109] Another criticism is the lack of uniformity that would follow from an increase in the age of adulthood. For the purposes of this section, assume there is new evidence that the brain is fully developed by the age of twenty-five so there is a proposal that the age of adulthood in New York should be raised from sixteen to twenty-five. There are many implications that would stem from this increase. For example, an individual may drive at sixteen, drafted at eighteen, and consume alcohol at twenty-one. All of the above fall below the age of twenty-five. The lack of uniformity would be found in how the state is defining adulthood for different behaviors. Additionally, some actions that require one to use the portion of the brain that is still underdeveloped before the age of twenty-five, like those associated with driving and serving the country, would be legal for non-adults as defined by the age of adulthood.

Conclusion

New York State has a reputation for being progressive, but still implements an arguably archaic practice that only one other state in the nation also follows today. That practice is treating sixteen- and seventeen-year-old offenders as adults in the criminal

104 Raise the Age, supra note 97.
105 Id.
106 Id.
107 Id.
108 Ritter, supra note 20.
109 See Palmer, supra note 4.

setting. There are undeniable differences between the juvenile brain and the adult brain, which can be attributed to the developmental stage the individual has reached at that point in her life. There are certain parts of the brain that merely cannot fully develop until an individual reaches her mid-twenties. It so happens that those parts of the brain that are still developing during adolescence, like the ability to make future plans, make complex decisions, and control impulses to pursue satisfying, though risky, behaviors, are important in terms of mens rea and aid in the determination of culpability in the criminal context.

While New York has the opportunity to follow the progressive trajectory she has always embarked on by raising the age of adulthood, there are numerous concerns regarding the reliability of brain science and whether the research actually supports raising the age.

Addendum

This Note was written in January 2017, prior to the passing of 'raise the age' legislation in April 2017. Governor Andrew Cuomo signed a bill that will, beginning on October 1, 2018, divert the majority of cases involving sixteen- and seventeen-year-olds either directly to Family Court or to judges with access to social services and special training.[110] Additionally, offenders under the age of seventeen will no longer be detained in county jails, like Rikers Island.[111] A similar rule for eighteen-year-olds will take effect in 2019.[112]

110 Jesse McKinley, 'Raise the Age,' Now Law in New York, Is Still a Subject of Debate, N.Y. Times, (April 10, 2017), https://www.nytimes.com/2017/04/10/nyregion/raise-the-age-new-york.html.
111 Id.
112 Id.