INTERPRETING CHAMBERLAIN'S “REASONABLE RELATION” BETWEEN ACCESS AND INFRINGEMENT IN THE DIGITAL MILL

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I. INTRODUCTION

Seven years have passed since Congress enacted the Digital Millennium Copyright Act (DMCA), the statute which makes circumventing technological barriers to copyrighted works illegal. [1] In the meantime, the DMCA has been widely criticized, and, within the last two years, undergone a major change in interpretation by the Federal Circuit in Chamberlain Group, Inc. v. Skylink Technologies, Inc. [2] In Chamberlain, concerned that the DMCA had created an entirely new property right, the Federal Circuit added a new limitation to the scope of the DMCA. Chamberlain held that a plaintiff must prove a “reasonable relation” between access to a copyrighted work and infringement. What this “reasonable relation” means however, has yet to be defined.

The nature of the “reasonable relation” test goes to the heart of the DMCA and its impact on innovation. If the “reasonable relation” between access and infringement is too broad, the DMCA will stifle many ideas which build on protected works, because the public will be prevented from accessing works for the purpose of creating improved versions and interoperable products. Innovation depends in large measure upon building on the works of others. As Sir Isaac Newton famously said, “If I have seen farther than others, it is because I have stood upon the shoulders of giants.” [3] On the other hand, if the “reasonable relation” is too narrow, then the DMCA would prohibit too little access. Creative works in digital formats would be subject to massive piracy. Creators would then lose the profit incentive to create any works at all.

In this paper, I suggest six possible “reasonable relations:” 1) ‘but for’ causality, 2) reasonable foreseeability, 3) Sony's [4] substantial non-infringing use, 4) defendant's intent, 5) vicarious liability, and 6) Judge Posner's balancing approach in In Re Aimster. [5] I evaluate these possible “reasonable relations” in light of the policies underlying copyright law and the DMCA using the facts of Davidson & Associates v. Jung [6] as a test case. I show how these different possible “reasonable relations” would play out in the facts of Davidson because these facts demonstrate the complexity of digital technology. Moreover, Davidson illustrates the pitfalls and promise of the internet revolution. In Davidson, the plaintiffs worried about mass piracy of video games they had invested millions of dollars to create. [7] Meanwhile, the defendants created an improved network on which to play the games [8] -- precisely the type of innovation and creativity that copyright law is intended to promote.

The second part of this paper discusses copyright law and the DMCA. In the third part, I examine the interpretation of the DMCA in Chamberlain. The fourth part introduces Davidson and discusses the correct outcome given copyright law policies. I apply Chamberlain's interpretation of the DMCA to the facts in Davidson in the fifth part and discuss which “reasonable relations” would produce the right result in light of copyright law policies. Finally, I give my conclusions.

II. COPYRIGHT POLICIES AND THE DMCA

Copyright law is ultimately concerned with encouraging the production of creative works for the benefit of the public. [9] Legal protection and propertization of creative works is intended to serve the public by allowing the creator to profit from her creation. Imagine a writer who works for years to write the Great American Novel. She invests her time, resources, and savings in the book. As soon as she publishes it, however, a competitor makes hundreds of copies and steals the author's sales by underselling her book. As a result, the author may not be able to charge a price which will compensate her for time invested in writing the book. This deters her from writing a novel in the future.

At least in theory, the DMCA, as a component of copyright law, should serve the same goal of encouraging
production of creative works. Congress passed the DMCA to counter the digital threat to copyright. [10] Unlike previous modes of fixing expression, digitalized information can be copied *ad infinitum* without loss of quality. Moreover, the internet and general access to personal computers make copyright violation of expression in digital format more like the spread of infectious disease than the old mode of point source copying. [11] In the past, the copyright owner could shut down one printing press to stop illegal copying. Now, millions of personal computers function like illegal printing presses, and illegal copying spreads rapidly across the world through the internet. The DMCA deals with this enforcement problem by making the enabling point source, liable. The enabling point source is a person who does not infringe, but who makes copyrighted material accessible to others through circumvention. By assisting enforcement, the drafters hoped to even the playing field between copyright owners and the public in the digital age. [12]

The DMCA has two primary liability provisions: the anti-circumvention provisions Section 1201(a)(1), and the anti-trafficking provision Section 1201(a)(2). The anti-circumvention provision reads, “No person shall circumvent [without authority] a technological measure that effectively controls access to a [copyrighted] work ....” [13]

To explain with an analogy, imagine a copyrighted book in a locked box. The lock on the box is the “technological measure that effectively controls access.” [14] The book inside is the copyrighted work. [15] If someone picks the lock without obtaining permission, that person would be liable under Section 1201(a)(1) for illegal circumvention.

The anti-trafficking provision makes a circumventer liable for making access available to the public. [16] The key difference between Sections 1201(a)(1) and 1201(a)(2) is that the latter section requires that the defendant offer the circumvention technology to the public. [17] To return to the locked box analogy, you would be liable under the anti-trafficking provision if you made a key that opened the lock, and then made copies of those keys available to the public. [18]

**III. RE-INTERPRETATION OF THE DMCA IN CHAMBERLAIN**

*Chamberlain* dramatically changed the interpretation of Section 1201(a) by adding the requirement that access have a ‘reasonable relationship’ to infringement. [19] The Federal Circuit in *Chamberlain* reasoned that simply circumventing a technological measure which protects a copyrighted work should be legal, unless the access was connected in some way to the infringement. [20] Otherwise, the DMCA would lead to at least three results which create a new property right in addition to and separate from copyright. [21]

First, a consumer would be prevented from accessing copyrighted material to which he already had legal access through his purchase. [22] This was the case in *Chamberlain*. [23] In *Chamberlain*, the plaintiff manufactured garage door openers: both the mechanism inside the garage which opened the door and the remote control with which users could open the door from outside the garage. [24] Often, owners of these garage door openers would lose the remote control, so the defendants created a universal remote control. [25] The universal remote sent a radio signal to plaintiff's mechanism inside the garage which overcame a technological lock and opened the garage door. [26] The plaintiff asserted a DMCA violation because the defendants' remote circumvented a technological lock to access the copyrighted software inside the garage door opener. [27] The Federal Circuit, however, held that since the consumer already had access to the software inside the garage door opener by legally purchasing it, there was no possibility of infringement and therefore no violation of the DMCA. [28]

Second, the DMCA would allow copyright owners to insert one line of copyrighted code amid uncopyrighted material and simply slap a protective technological measure across everything. [29] Then, anyone who circumvented the technological measure to access uncopyrightable material would be liable under the DMCA because the technological measure protected any copyrighted material no matter how miniscule it might be. [30] In this case, the DMCA would create a property right in uncopyrighted material. Moreover, this situation potentially violates antitrust law by extending the copyright monopoly to unrelated material. [31]

Third, a circumventer could be liable under the DMCA even if she lacked any intent to infringe the copyrighted material protected by a technological lock. The Federal Circuit Court noted that disabling a burglar alarm to a house
with a copyrighted book inside would be a per se violation of the DMCA -- an “absurd” result. [32]

Of course, the idea behind the DMCA is to prevent circumvention without infringement in order to make the enabling point source liable. For example, Jon Johansen, the teenager who unencrypted the CSS lock on DVDs, may not have committed copyright infringement himself, but by publishing the decryption code on the Internet, he made it possible for millions of people to infringe DVDs. [33] Chamberlain tilts the balance significantly back towards circumventers by requiring a “reasonable relationship” between access and infringement. [34] Under Chamberlain, for example, Johansen would only be liable under the DMCA if there were a “reasonable relationship” between his access and the ensuing infringement of DVDs by people all across the globe.

The Federal Circuit justified its imposition of the “reasonable relationship” requirement by pointing to the Constitution and Congressional intent. With regard to the Constitution, the Court noted that the Supreme Court interpreted the Constitution to find that Congress only has the right to define the public's “appropriate access” to a work, not to deny access all together. [35] With regard to Congressional intent, the Federal Circuit argued that Section 1201(a) implicitly creates a “new, highly protective alternative regime” for copyrighted work because mere access, not infringement is made legal. [36] The Court reasoned that Congress could not have intended to create such a right entirely “by implication.” [37]

Despite the Federal Circuit's rationale behind the ‘reasonable relationship’ requirement, there are significant problems with this interpretation. The very language of the DMCA seems to contradict the Federal Circuit's conclusion. For one, if Congress intended that Section 1201(a) prohibit infringement, not just access, Congress could have explicitly stated that the technological measure must “protect[] a right of the copyright owner” -- just as it did in Section 1201(b). [38] Instead, the fact that the only difference in language between Sections 1201(a)(2) and 1201(b) is that the technological measure “controls access to a work” instead of “protects a right of the copyright owner” suggests that this distinction was intentional. [39] For another, if Section 1201(a)(1) protects a right of the copyright owner too, it becomes identical to Section 1201(b) and, therefore, redundant. [40] Furthermore, if Section 1201(a) only applies to infringement, why would Section 1201(a)(1)(B) make a special provision for “noninfringing use”? [41] Finally, why would Congress include exceptions to copyright infringement in the DMCA, such as fair use and interoperability, which were already available under copyright law, unless the DMCA did not create a new right above and beyond infringement? [42] If Section 1201(a) only prohibits infringement and not access, there is no need to explicitly state that fair use is an exception.

The Federal Circuit was probably well aware of these problems, but made the Chamberlain ruling anyway based on the policy grounds discussed above. Despite criticism, the Chamberlain interpretation is probably here to stay. In 2005, the Federal Circuit affirmed the validity of the ‘reasonable relationship’ requirement in Storage Technology Corp. v. Custom Hardware Engineering & Consulting, Inc. [43]

IV. DAVIDSON AND VIDEO GAME COPYRIGHT LAW

A. Davidson

Davidson is a case of defendants reverse engineering the plaintiff's product to create a new product which can interoperate with the plaintiff's product. Davidson & Associates (DBA Blizzard Entertainment, Inc. hereinafter “Blizzard”) created a series of popular video games which could be played in three different formats. [44] Players could play individually against the computer, among a few players on a local area network, or on the internet through a network created by Blizzard called “Battle.net.” [45] Players could get access to Battle.net simply by buying a Blizzard game. [46] The products were quite successful; in fact Battle.net had nearly 12 million active users. [47]

Several players including Tim Jung, however, became fed up with several aspects of Battle.net. [48] For one, Battle.net was easy to hack, so some players created shortcuts which gave them an unfair advantage over other players. [49] For another, players filled discussion areas with profanity. [50] As a result, Jung and a few other players decided to create their own network for playing Blizzard games. [51]
Jung and the others, however, had to overcome a technological barrier before they could create an interoperable network. [52] Blizzard protected access to Battle.net through a ‘secret handshake’ between the CD game and the network. [53] As part of the authentication sequence, each game CD sent its unique CD key code to Battle.net. [54] Battle.net would verify that the CD key was valid and that no other CD on the network had the same key. [55] The ‘secret handshake’ also prevented the CD from being accessed by a network other than Battle.net. [56]

The defendants had to reverse engineer the CD game and learn the authentication sequence. [57] The purpose of the reverse engineering was not to get access to Battle.net, to which the defendants already had access, but to make the new network interoperable with the CD. [58] The defendants took fairly standard reverse engineering steps: copying code from the CD, picking it apart, and learning what signals Battle.net sent to the CD. [59] Then, the defendants created a new network which they called ‘bnetd.org.’ [60]

The defendants infringed some of the plaintiff’s copyright in the process. [61] A network in itself is a common software product, so Blizzard could not claim any infringement in its creation. However, defendants added software to bnetd.org to circumvent the ‘secret handshake’ on CDs so that the CDs would play on bnetd.org. [62] Every time a CD logged onto bnetd.org, the ‘secret handshake’ on the CD was circumvented. [63] The defendants also copied some material from Battle.net and from the CD games and put it on the new network to make it resemble Battle.net more closely. [64] Thus, the final product appeared and functioned very similarly to Battle.net. [65] Unlike Battle.net, however, bnetd.org did not check whether a CD key was valid or in use by another player. [66] But, the defendants could not have checked for valid CD keys because Blizzard did not disclose the methods it used to generate CD keys or to confirm the validity of CD keys. [67]

Blizzard sued for copyright infringement and violation of Sections 1201(a)(1) and 1201(a)(2) of the DMCA. [68] In a consent decree, Jung admitted to copyright infringement. [69] Both the District Court of the Eastern District of Missouri and the Eighth Circuit Court of Appeals held that the defendants were liable for violating both Sections 1201(a)(1) and (2) of the DMCA. [70]

B. Interoperability and the Balance of Copyright Law Policies

Courts have tended to promote the creation of new, interoperable products even though the process of creation sometimes infringes on the intellectual property rights of the original product's creator. [71] A great part of progress in science and the arts comes from building on top of what others have done before. In the case at hand, bnetd.org was an improvement on Battle.net. And, the competitive process tends to spur more improvement. Blizzard, for example, would have to improve Battle.net to keep up with improved networks like bnetd.org. In general, allowing competitors to create interoperable products leads to a greater variety of products because more minds and more ideas have the opportunity for expression. In contrast, only allowing the original creator to build on his previous steps limits the potential for creativity. It also leads to better products by stimulating competition. In software copyright, all this comes at little cost since copyright does not protect ideas, only expression. [72] The functional aspects of software code can only be protected by patent, not by copyright. [73]

In the video game context, courts have recognized the value of interoperability specifically in three cases: Sega Enterprises Ltd. v. Accolade, Inc, Atari Games v. Nintendo, and Sony v. Connectix. [74] The Sega case addressed the issue of reverse engineering for the sake of interoperability most definitively. In Sega, Sega Enterprises Ltd. produced and marketed the ‘Genesis’ game console and a series of video games to play on the console. [75] To ensure that only Sega-sanctioned games were compatible with Genesis, Sega installed a security system called TMSS on the console. [76] This security system prevented Genesis from accepting video game cartridges without the correct TMSS initialization code. [77] Meanwhile, Accolade, a competitor in the video game market, saw the success of Sega's games and decided to enter the market by creating video games which were compatible with the Genesis console. Accordingly, Accolade purchased a Genesis console and three Sega games and reverse engineered the TMSS initialization code. [78] In the process of reverse engineering, Accolade made copies of the object code in the game cartridges. [79] When Accolade created its own video games, however, the only material copied from the Sega game cartridges were the interface specifications. [80] Accolade also unwittingly copied a small piece of TMSS initialization code which caused a screen to pop up with the Sega trademark when Accolade's games where played on the Genesis console. [81] Sega, of course, sued for copyright and trademark infringement. [82]
Regarding the trademark infringement claim, the Ninth Circuit opined that Sega, not Accolade, was primarily responsible for any confusion created by the TMSS pop-up screen because Sega had hidden the trigger for the pop-up screen in the TMSS initialization code. [83] Sega was essentially protecting the functional elements in of its Genesis console by forcing a competitor like Accolade to infringe Sega's trademark in order to make an interoperable product. The court reasoned that Sega could not protect the functional elements in the Genesis console because the console was not patented. [84]

The court similarly focused on the unprotectability of functional elements in Sega's copyright infringement claim. [85] Because it was necessary to understand the functional requirements for interoperability, the court held that the copying conducted during reverse engineering was a fair use. [86] The court noted, first, that the functional elements in computer code cannot be accessed at all without copying, because the object code cannot be understood without a decompilation process. [87] The court then made a policy judgment that the need to access the functional aspects of the software outweighed copyright protection. Access to functional aspects of the software makes possible the development of interoperable programs and the “growth of creative expression.” [88] This reflects the underlying balance of copyright law: to further the long range goal of providing society with the benefits of creative expression by pursuing a short range goal: the protection of the works of authors. When, as here, protecting the right of the author does not promote the long range goal because the work being protected is functional, the solution is clear. Accolade should be allowed to copy the object code.

The court favored the access interest even though, under the first fair use factor, the final product would directly compete with Sega's copyrighted product. The court reasoned that the final product would compete in terms of function, not in terms of creative expression. Therefore the intermediate copying was only indirectly commercial in nature. Still, the court did not give a green light to all reverse engineering of program code, but only to that undertaken for a “legitimate reason,” such as to gain access to the functional specifications necessary to make a compatible program, and then if it “provides the only means of access to those elements of the code that are not protected by copyright.” [89]

Legal commentators have overwhelmingly supported the decision in Sega and succeeding cases have universally upheld a reverse engineering right. [90] Connectix followed the analysis in Sega. Instead of creating rival video games, the defendants in Connectix created a rival platform on which to play the games. [91] As in Sega, Sony sold a console play station on which to play video games. Connectix reverse engineered the console, creating a ‘virtual console,’ software that would allow the player to play Sony's games on their personal computer. [92] Using Sega's reasoning, the court found the reverse engineering a fair use. [93] Sony could not use copyright to prevent Connectix from competing with an interoperable product. [94] Atari used similar logic. [95]

V. APPLICATION OF CHAMBERLAIN TO THE FACTS IN DAVIDSON

Did the defendants violate the DMCA? At first glance, it would appear that they did not “circumvent a technological measure that effectively prevented access to a copyrighted work.” The defendants copied in two ways. They copied code: the protocols that governed access between the game CDs and the network. They also copied images from Battle.net and put them onto bnetd.org. With regard to copying the code, code which functions as a technological lock is not protected by copyright because it is functional, not expressive. [96] In any case, the code was the lock, it was not the copyrighted material protected by the lock. This copying, therefore, involved neither copyrighted material nor circumvention. The DMCA should not apply.

With regard to the images copied from Battle.net, these images were clearly copyrighted material. The defendants, however, did not circumvent a lock in order to access these images. As legal owners of the CD games, the defendants already had access to the images on Battle.net. [97] Similarly, in Chamberlain, the purchasers of garage door remote controls already had access to the copyrighted material in the remotes. [98] The purchasers in Chamberlain could not be found liable for using software to which they had legally purchased access. [99] Thus, in Davidson as in Chamberlain there was no unauthorized circumvention and no violation of the DMCA. [100]

Arguably the defendants also facilitated copying by third parties. This is the copying on which I will focus in
analyzing the “reasonable relationship” between access and infringement. Third parties engaged in two types of copying too. First, people used their Blizzard game CDs to play on bnetd.org. Every time they played on bnetd.org, bnetd.org circumvented the locks on their game CDs in order that the game could interface with bnetd.org. When gamers played on bnetd.org, their computers downloaded into RAM the copyrighted images that the defendants had taken from Battle.net. This copying constituted unauthorized copying of copyrighted works and was therefore an infringement. What makes this confusing is that the defendant's circumvention of the secret handshake did not give users direct access to Battle.net **itself**, but gave users access to a **copy** of part of Battle.net. Each time players logged onto bnet.org, they made illegal copies on their personal computer's RAM of the copyrighted material from Battle.net. [102]

The DMCA, however, adds the additional limitation that only **unauthorized** access is prohibited. Legal users of the Blizzard games -- those players who had purchased legal copies of the game CDs -- were authorized to view images from Battle.net because their game CDs were designed to interface with battle.net. Thus, only illegal players -- those players who had bootlegged copies of CDs - were unauthorized to access Battle.net images. It appears that only illegal players would be violating the DMCA by playing on bnetd.org with their pirated game CDs and copying images stolen from Battle.net onto their computers' RAM each time they played. Each time these illegal third parties played, the defendants also infringed by distributing, performing, and displaying these copyrighted images to the illegal third party players.

The second type of copying arguably facilitated by the defendants was bootlegging of CDs. A large part of the reason for getting a Blizzard game CD was to play on battle.net against millions of other players. Before bnetd.org, if you pirated a Blizzard game CD, you could not play on a network because battle.net checked for valid CD codes. Bnetd.org, however, allowed Pirated CDs onto the network because it did not check for valid CD codes. Bnetd.org, therefore, became a strong additional incentive to illegally copy Blizzard game CDs. But, here, the link between the defendant's circumvention and infringement is quite attenuated.

In the following sections, I will examine six possible ‘reasonable relations’ in the context of the facts of Davidson and present policy reasons for and against each: ‘but for’ causality, reasonable foreseeability, substantial non-infringing use, the defendant's intention, a vicarious liability standard, and Judge Posner's balancing approach in In Re Aimster. [103] As I discussed in Part I, the broader the interpretation of the ‘reasonable relation,’ the wider the net cast by the DMCA. [104]

A. But for Causality

‘But for’ causality is a low bar to prove a reasonable relationship between access and infringement. At a minimum, plaintiffs should have to prove but for causality, because otherwise there would be no causal link at all between access and infringement. It is hard to imagine how there could be a “reasonable relationship” without some element of causation.

The defendants' infringement discussed above would not overcome the ‘but for’ bar. Defendants infringed by copying copyrighted images from Battle.net to bnetd.org. They did not have to circumvent, however, to copy these images because they already had access to Battle.net. They had legally purchased Blizzard game CDs which gave them access. For the defendants, therefore, the line of reasoning: ‘but for circumvention, they could not infringe the images from battle.net’ is incorrect. ‘But for’ causality does not link access to this type of infringement.

Using ‘but for’ causality, however, third party use of bnetd.org appears to violate the DMCA. But for circumvention of the secret handshake, players using illegal copies of the CD would not have been able to get access to copyrighted material from Battle.net and to infringe by illegally copying that material every time they uploaded it on their computers by logging on to bnetd.org.

Regarding infringement by bootlegging game CDs, the opportunity to play on bnetd.org with thousands of other players must have been the incentive for many people to make bootleg copies of Blizzard's game CDs. Otherwise, the user of a pirated game could not play on a network at all because they could not access Battle.net. [105] ‘But for’ bnetd.org, a certain number of third parties might not have bothered to make illegal copies of the game CDs --
infringement in its own right. Shouldn't the defendants have some liability for spawning a massive wave of illegal CD copying? Perhaps. It seems, however, that ‘but for’ causality goes too far.

On the one hand, it is arguably fair to make the defendants liable for the cost of illegal CD copying rather than the plaintiff, because this would force the defendant to take into account the illegal costs of his endeavors. In the long run, this policy would minimize infringement costs. ‘But for’ causality also reflects the fairness principle that between two parties the more guilty party should pay. Indeed, the Federal Circuit used ‘but for’ reasoning in both Chamberlain and in Storage Technology. In Chamberlain, the Court found that the customers did not infringe, because they already had permission to use their copy of the software. [106] The line of reasoning: “but for unauthorized circumvention, there would have been no copying,” is not accurate. [107] Therefore, circumvention did not lead to infringement. Similarly in Storage Technology Corp., the court noted that the copying of the software into the user's RAM took place whether or not there was circumvention. [108] As a result, the court found no DMCA violation. [109] However, since ‘but for’ causality is a minimum standard, these cases do not hold that ‘but for’ causality is the extent of the “reasonable relationship.” The Federal Circuit may have failed to find any causal relationship between circumvention and infringement in those two cases and then not gone on to consider other requirements in dicta.

On the other hand, ‘but for’ causality leads to an extreme outcome. Should the defendants be liable for every infringement which could possibly result from their circumvention, no matter how unforeseeable? This approach discourages efforts to make interoperable products. It also encourages copyright owners to include all sorts of booby-traps in their products to force circumventers to infringe and therefore face liability under the DMCA.

B. Reasonable Foreseeability

The next possibility is ‘reasonable foreseeability.’ Like ‘but for’ causality, ‘reasonable foreseeability’ covers the infringement discussed above: third parties copying the material originally from Battle.net. It also probably covers the defendant's distribution, public display, and public performance of that material. However, ‘reasonable foreseeability’ might provide a better approach to illegal copying of game CDs. If it was common knowledge that the only reason people bought the game CDs was to play on a network, it is certainly reasonably foreseeable that some people would illegally copy CDs if they could play on bnetd.org. Reasonable foreseeability also puts the defendant's liability within predictable limits, thereby encouraging interoperability efforts and the creation of new products for the public. Of course, reasonable foreseeability might seem less fair because it shifts unforeseeable costs to the plaintiff, the arguably less guilty party.

This policy might encourage the creation of new products because the plaintiff would have an incentive to make its products accessible to interoperability in a way that reduces extra costs. For example, in Sega, the plaintiffs included code in their authentication sequence (TMSS) which caused a screen with the Sega trademark to pop up on the user's screen. [110] Defendants unwittingly copied this code when making their product interoperable so that Sega's trademark screen appeared on the defendant's game. [111] This may not have been reasonably foreseeable for the defendant, but it was reasonably foreseeable for the plaintiff. The court in Sega ultimately found the plaintiffs responsible for the pop-up screen, and the same principle should apply under the DMCA. Although the cost here was trademark infringement, not copyright infringement, it makes sense that the plaintiff have an incentive to make interoperability possible. Thus, ‘reasonable foreseeability’ seems like a good candidate for the ‘reasonable relation.’

C. Sony Commercially Significant Non-Infringing Use

Another alternative is to use a rule similar to that of Sony: that circumvention is legal if it produces a “commercially significant non-infringing use.” [112] In Sony, the Supreme Court found that VCRs increased the market for TV programming, a commercially significant use, through their time-shifting function, [113] which the Court found to be a fair use and therefore non-infringing. [114] The Court's conclusion reflected its concern with balancing the right of the copyright holder to protect her monopoly against “the rights of others to freely engage in substantially unrelated areas of commerce.” [115]

The court in RealNetworks, Inc. v. Streambox, Inc. specifically dealt with the applicability of Sony's reasoning...
to the DMCA. [116] The opinion concluded that Sony did not apply because circumvention to get access to copyrighted material “runs afoot of the DMCA” before the Sony substantial non-infringing use inquiry arises. [117] However, this conclusion is worth revisiting under Chamberlain's interpretation of the DMCA. If the inquiry has shifted from whether the defendant accessed copyrighted material to whether the circumvention was ‘reasonably related’ to infringement, the Sony inquiry into whether an illegal use rises to the level of infringement is applicable. [118]

The Court in Sony, of course, does not discuss “commercially significant non-infringing use” in the context of the DMCA, but rather in fair use. [119] However, the ‘reasonable relationship’ is comparable to fair use in that it is also an inquiry into reasonable use: whether the defendant's infringement allowed by his circumvention is ‘reasonable.’ The concerns in fair use and circumvention are also similar. In both, there is a concern that too much infringement could discourage investment in creative expression.

In Davidson, the ‘right to freely engage in substantially unrelated commerce’ is arguably the right of legal Blizzard game players to play on a network superior to Battle.net. The opportunity to play on a better network is a utilitarian good. Assuming that using bnetd.org is legal for players who purchased Blizzard games, why should the infringement of a few illegal players block the greater utility of a ‘substantial’ number of legal players? [120]

One problem with applying Sony to Davidson is that the Supreme Court specifically referred to “commerce” and here bnetd.org is free. [121] However, the Ninth Circuit use of Sony's logic in its fair use discussion in Napster is helpful. [122] Like Davidson, Napster was a ‘non-commercial’ service in that users did not buy or sell the music they shared. [123] Similarly, in Davidson, the defendants did not charge users for use of bnetd.org. [124] However, like Napster, the net effect of bnetd.org is to decrease the plaintiff's share of commerce: because Battle.net loses money on advertising when players migrate to bnetd.org and bnetd.org does not appear to sell advertising to make up that commerce. [125] The Court found that this effect made the nature of use commercial in Napster. [126] On the other hand, the Court in Sony considered the impact of its ruling on the many content providers who had not sued. [127] The Court reasoned that if it made VCRs legal, the impact would be to increase commerce in the nation overall, regardless of the impact on the plaintiffs in the case. [128] Using similar hypothetical reasoning about the impact on parties not involved in Davidson, allowing networks like bnetd.org would encourage others to create alternative networks for other video games and advertise on them. The net result of better and a larger variety of networks might encourage more people to buy video games and create the “commercially significant non-infringing use.” [129] The impact in Davidson, however, is more hypothetical because these other parties who have created networks did not yet exist, whereas in Sega, many other television content providers already existed. [130]

Another problem with applying Sony is that the facts in Sony involved analog, not digital, recordings. [131] The number of copies that can be made digitally is far greater than the number that can be made with analog because the quality does not diminish with successive copies. The court in Napster pointed out this difference in finding that Napster's music-sharing was not a fair use: once the copyrighted material is posted on the Internet, it becomes “available to millions of other individuals.” [132] As a result, the amount of infringing use could overwhelm the amount of non-infringing use. However, it is not clear whether Sony's ‘substantial’ non-infringing use referred to an absolute amount or an amount relative to the infringing use. [133] In any case, Sony's standard would also encourage interoperability and the creation of new products. The success of VCRs and their contribution to a whole new industry of videos and profits to the content providers themselves proved the wisdom of the Court's decision. Preventing defendants like Jung from creating new products because of some small infringement might block the growth of such industries.

D. Intended Infringement

Moving away from causality, perhaps the DMCA should resemble an intentional tort: defendant liability for infringement she intended to cause. In other words, the defendant would have to circumvent with the intention of infringing or facilitating infringement. In Davidson, the defendants would argue that it certainly was not their intention to make bnetd.org available to illegal users or to encourage them to make new CDs. The defendants' good intention was manifested by the fact that they had no commercial motive and therefore it didn't matter to them if they got more users -- legal or illegal. Also, the defendants did not advertise bnetd.org or provide any information on how to copy game CDs. In fact, Jung and his fellow defendants could not prevent players with pirated CDs from

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accessing bnetd.org because Jung did not have the list of valid CD codes from Blizzard. [134] Only Blizzard could authenticate legally purchased CDs. [135]

Using intention at the ‘reasonable relation’ would protect a circumventer in a case like Sony, where the defendant's efforts to make an interoperable product produced a substantial number of non-infringing uses. [136] However, intention seems like a bad approach. For one thing, it brings the DMCA too close to tort law and tort law seems inappropriate in the context of copyright law, where the principles are based on utilitarian incentive concerns rather than wrongdoings per se. As a result, it may make more sense to focus on the outcome, such as a substantial non-infringing use, or risk-management through reasonable foreseeability. Moreover, figuring out the intention is more difficult than determining the outcome, since intention is subjective. Finally, in the world of circumvention, much hacking is done primarily for pleasure and not with the intention of infringing. Jon Johansen, for example, broke the CSS electronic lock in DVDs for the challenge of it, not for profit. [137]

E. Vicarious Infringement

Yet a different possible ‘reasonable relationship’ adopts the standard used in vicarious infringement. This would require the plaintiff to prove that the defendant received financial benefit from the infringement and had the right and ability to control the direct infringer's acts. [138] Using the vicarious infringement standard, defendants would not be found liable. Jung and the other defendants did not benefit from illegal players use -- or anyone's use, for that matter. Arguably, however, the defendants do receive a financial benefit, using the court's reasoning in A&M Records, Inc. v. Napster Inc. [139] The court defined financial benefit broadly, noting that the “future revenue” of Napster would increase as more users were drawn to the database. [140] In Davidson, also, if the defendants decided to sell advertising on bnetd.org in the future, the number of people drawn to bnetd.org by infringing activity would increase its “userbase.” [141] Even so, Jung did not have the ability to stop illegal users from using bnetd.org because he did not have access to the list of valid CD keys.

The benefit of using the vicarious infringement standard is that Blizzard would be motivated to make interoperability possible without infringement, because otherwise circumventers like Jung would not be liable. If Blizzard made it possible for Jung to check CD keys and Jung did not take advantage of that, Jung would be liable for ‘willful blindness.’ [142] Thus, vicarious infringement promotes interoperability and producing more products for the public.

On the other hand, this is a very high bar for plaintiffs to prove: much higher than reasonable foreseeability and probably higher than commercially non-infringing use. The standard would have no effect in cases where a circumventer made a circumventing technology available to the public and then washed their hands of it. This would, for example, let malicious hackers off the hook. It would also not stop hackers who did it just for the fun of it, causing huge losses to the copyright owner. Finally, this tool is already available to plaintiffs under a vicarious infringement claim.

F. Judge Posner's Balancing Approach

A final possibility is to take Judge Posner's approach in In re Aimster. [143] He argued that the court should make a cost-benefit analysis in each case: the defendant would be liable only if the cost of preventing infringement was less than the amount of copyright damage which would ensue if infringement continued unchecked. [144]

Using this approach, the defendants in Davidson should be liable for infringement related to the illegal copies of Battle.net material. It would have been a very simple matter for the defendants to create bnetd.org without using copyrighted images from Battle.net in bnetd.org. The Battle.net material was not necessary to make bnetd.org work and probably contributed only marginally to making bnetd.org a better product. [145] As a result, the cost of preventing infringement by not including Battle.net material on bnetd.org was next to nothing. However, leaving that material on bnetd.org caused the infringement described above: illegal copies on the personal computers of users and illegal distribution, public display, and public performance by the defendants.

The cost-benefit analysis is less clear in the infringement resulting from illegally copied CDs. With regard to the
cost of preventing infringement, defendants could not have prevented illegal CDs from connecting to bnetd.org, without Blizzard's list of valid CD keys. Therefore, the cost of not allowing illegal CDs on bnetd.org must reflect the cost of banning bnetd.org altogether. And, the cost of banning bnetd.org is the loss of the opportunity for players to play on a network better than Battle.net. The cost of copyright damage is simply the number of game CDs illegally copied because of access to bnetd.org. Thus, the relevant inquiry is whether the cost of additional CDs illegally copied outweighs the value of playing on an improved network. This is a fact-specific analysis.

Judge Posner's approach is excellent in terms of aligning the cost with the benefit and therefore, arguably, best stimulates innovation. The value of interoperability, for example, would be weighed against infringement, thereby making possible the creation of new and useful products. Creation of new products is balanced against copyright damage to previous innovators and, as a result, does not discourage investment in creation.

Posner's test, however, puts the burden of unforeseeable infringement on the circumventer. For example, in Davidson, the defendants might not have foreseen all the infringement that would result from bnetd.org when they created it. Nevertheless, Posner would weigh that infringement against the benefit provided by bnetd.org in deciding whether the defendants are liable. This encourages the owner of the original product to design his product so that the defendants cannot make an interoperable product without infringing. In Posner's test, this forced infringement would count against the defendants, not against the plaintiffs. Another problem with Posner's approach is that the infringement caused by an interoperable product is likely to be more obvious than the full benefit of that product. That is, the full benefit of a product may not be realized until much later, when other industries have piggybacked off the technology or another development makes the interoperable product even more useful. For example, in Sony, the judges could not have guessed that the VCR would spawn a world-wide video industry. However, the infringement which the VCR made possible was immediately obvious. Thus, Posner's weighing of cost and benefit analysis tends to be skewed in favor of copyright owners.

VI. CONCLUSION

In conclusion, whether the defendants in Davidson would be found liable under the Chamberlain approach depends on how the ‘reasonable relationship’ between circumvention and infringement is construed. Under the ‘but for,’ ‘reasonable foreseeability,’ and Judge Posner's balancing test, the defendants would be liable not only for third party's infringement of copyrighted material from Battle.net, but also for third party's pirating CDs. Under the Sony substantial non-infringing use, intention and vicarious liability tests, the defendants would be liable for third party's infringement of copyrighted material from Battle.net, but not for third party's pirating CDs.

Judge Posner's approach is particularly useful because it requires analysis of whether each infringing aspect of the defendant's product is worth keeping. In Davidson, the copyrighted material from Battle.net that the defendants copied and put on bnetd.org seems relatively unnecessary, yet it accounts for two of the three types of infringement discussed above. The material from Battle.net was apparently not needed to make bnetd.org work. [146] It made the bnetd.org appear more similar to Battle.net, but the aesthetic loss seems minimal. Therefore, the court deciding this case should simply have issued an injunction that the defendants take the copyrighted material from Battle.net off bnetd.org.

The only remaining objection to bnetd.org is the third type of infringement: that bnetd.org encourages users to illegally copy CDs, because they can play them on a network, bnetd.org, instead of by themselves. However, the illegal copying of CDs seems to be partially Blizzard's fault. By creating a secret handshake, Blizzard did not make it possible to create an interoperable network which would screen out illegal users. To allow Blizzard to use copyright law to prevent use of functional elements of its technology and interoperable uses is against the public policy behind copyright law: to promote the increase in expression and uses for the benefit of society. [147] As discussed above, only the ‘but for’ causality test would definitely make the defendants liable under the DMCA for illegal CD copying. In contrast, the intention and vicarious liability tests would definitely not hold the defendants liable. In the three remaining approaches: reasonable foreseeability, Sony's commercially non-infringing use and Judge Posner's balancing test, the outcome is less clear and is a more fact-specific analysis.

These last three approaches are probably the best ‘reasonable relations' between circumvention and
infringement. As these three tests require, it seems fair to ask for more facts about the illegal CD copying in Davidson. If no one would illegally copy Blizzard's game CDs if bnetd.org did not exist, the plaintiffs would have a strong case for DMCA violation against the defendants, especially if the defendants had knowledge that people would illegally copy CDs. As the court in Napster pointed out, although Napster might not be profiting from the number of users yet, it could, in the future, become more commercially-oriented, and profit from its illegal user-base. [148] Therefore, as in Posner's approach, the court should inquire how much copyright infringement damage occurred as a result of the defendant's actions. The court should then weigh this against the value created by the defendants.

However, the court should not weigh the damage caused by infringement only against immediate benefit created by the defendant's product, but also against reasonably foreseeable potential benefit, particularly any benefit created if many other players in the field followed the defendant's lead. Otherwise, the court errs on the side of preventing the growth of new industries, such as the video industry after Sony. This is similar to the approach the Supreme Court used in Sony: not only looking at the substantial non-infringing uses of the VCR in the context of the dispute between Sony and Universal City Studios, but also the total gain if many other studios benefited from the VCR. [149] In the Davidson case, many other software developers could create competing networks to Battle.net, which would increase the quality and options.

Other factors should come into play too. Any effort on Blizzard's part to design its CDs to prevent the defendants from excluding illegal CDs from bnetd.org, should count in the defendant's favor. Conversely, the defendant's ability to exclude illegal CDs from accessing bnet.org and a refusal to do so should count against the defendants.

In short, Chamberlain's 'reasonable relationship' offers an opportunity for courts to introduce the utility maximization logic into the DMCA which underlies the rest of copyright law. This in turn ensures that the DMCA strikes the right balance between copyright law and the public in the digital context.


[3]. Generally attributed to Newton's letter to Robert Hooke, dated Feb. 5, 1676, based on an aphorism from Robert Burton's The Anatomy of Melancholy: “Pygmies placed on the shoulders of giants see more than the giants themselves.”


[5]. In re Aimster Copyright Litig., 334 F.3d 643, 650 (7th Cir. 2003).

[6]. 422 F.3d 630 (8th Cir. 2005).

[7]. Id. at 633.

[8]. Id. at 635.


[12]. See, H.R.REP. No. 105-551, at 26 (1998); see Chamberlain, supra note 2, at 1195-96; Reimerdes, supra note 10, at 329.


[14]. Id.

[15]. See § 1201(a)(1).

[16]. § 1201(a)(2).

[17]. See § 1201(a)(1), (2). “No person shall manufacture, import, offer to the public, provide, or otherwise traffic in any technology, product, service, device, component, or part thereof, that--

   (A) is primarily designed or produced for the purpose of circumventing a technological measure that effectively controls access to a work protected under this title;
   
   (B) has only limited commercially significant purpose or use other than to circumvent a technological measure that effectively controls access to a work protected under this title; or
   
   (C) is marketed by that person or another acting in concert with that person with that person's knowledge for use in circumventing a technological measure that effectively controls access to a work protected under this title.” § 1201(a)(2).

[18]. See § 1201(a)(2).

[19]. Chamberlain, supra note 2, at 1195.

[20]. See id.

[21]. Id. at 1200-01.

[22]. Id. at 1200.

[23]. Id. at 1204.

[24]. Id. at 1183.

[25]. Id. at 1184-85.

[26]. Id.

[27]. Id. at 1185.

[28]. Id. at 1204.
[29]. See id. at 1201.

[30]. Id.

[31]. Id. at 1201.

[32]. Id. at 1201.


[34]. See Chamberlain, supra note 2, at 1204.

[35]. Id. at 1200 (quoting Eldred v. Ashcroft, 537 U.S. 186, 205 (2003)).

[36]. Id.

[37]. Id. (emphasis in original).


[39]. §§ 1201(a)(2), (b).

[40]. Efroni, supra note 38, at 288.

[41]. Id. at 288.

[42]. Id. at 288-89.

[43]. 421 F.3d 1307, 1318 (Fed. Cir. 2005).


[45]. Id.

[46]. Id. at 633.

[47]. Id.

[48]. Id. at 635 n.6.

[49]. Id. at 635 n.6. It appears to have been easy to hack Battle.net once it was accessed. However, the ‘secret handshake’ was apparently difficult to hack. See id.
[50]. Id.

[51]. Id. at 635.

[52]. Id.

[53]. Id. at 633 n.2. Blizzard also protected against access legally through ‘click-wrap’ End User License Agreement (EULA) that the purchaser of a CD game was required to accept before getting access to the CD. Id. at 634 n.4. Players also had to agree to a ‘click-wrap’ Terms of Use (TOU) before accessing Battle.net which prohibited reverse engineering Battle.net or creating a network for internet play of Blizzard games. Id. at 634 n.5. Both the EULA and TOU were also ‘shrink-wrap’ agreements because the outside packaging of the games contained a notification of the EULA and TOU. Id. at 635. This paper, however, focuses on the technological protections.

[54]. Id. at 634 n.2.

[55]. Id. at 633 n.3.

[56]. See id. at 636.

[57]. See id. at 635-36.

[58]. Id. at 635-36

[59]. Id. at 636.

[60]. Id. at 635.

[61]. Id. at 635-36.

[62]. Id. at 635-36

[63]. Id. at 636

[64]. Id. at 635, 636.

[65]. Id. at 635-36.

[66]. Id.

[67]. Id.

[68]. Id. at 636. Blizzard also sued for breach of contract, but this element of the case is beyond the scope of my paper.

[69]. Id. at 637.

[70]. Id. at 637, 641.

[71]. See Sony Computer Entm't, Inc. v. Connectix Corp., 203 F.3d 596, 604, 608 (9th Cir. 2000) [hereinafter Connectix]; Sega Enter. Ltd. v Accolade, Inc., 977 F.2d 1510, 1518 (9th Cir. 1992) [hereinafter Sega]; Atari Games
Corp. v Nintendo of Am., 975 F.2d 832, 843 (Fed. Cir. 1992) [hereinafter Atari].


[73]. Lexmark, supra note 72, at 534. Of course, there are situations in which this right to reverse engineer should be limited. Arguably, one such involves trade secrets. There should be no unfettered ‘right’ to access functionality in a technology which depends on a trade secret. The question is, however, whether copyright law can be used to protect trade secrets.

[74]. Connectix, supra note 71; Sega, supra note 71; Atari, supra note 71.

[75]. Sega, supra note 71, at 1514.

[76]. Id. at 1515.

[77]. Id.

[78]. Id. at 1514-15.

[79]. Id. at 1515.

[80]. Id. at 1515, 1516.

[81]. Id. at 1516.

[82]. Id. at 1516-17.

[83]. Id. at 1528.

[84]. Id. at 1526, 1528.

[85]. Id. at 1525.

[86]. Id. at 1527-28.

[87]. See id. at 1525.

[88]. Id. at 1523.

[89]. Id. at 1514, 1518.

[90]. See, e.g., Connectix, supra note 71, at 608; Atari, supra note 71, at 844; Pamela Samuelson, The Law and Economics of Reverse Engineering, 111 YALE L.J. 1575, 1610-12.

[91]. Connectix, supra note 71, at 598.

[92]. See id.

[93]. Id.
[94]. Id. at 606.

[95]. See Atari, supra note 71, at 842-43.


[97]. See Chamberlain, supra note 2, at 1204.

[98]. Id.

[99]. Id.

[100]. See id.

[101]. A copy in a computer's Random Access memory (RAM) is infringement for purposes of copyright law. MAI Sys. Corp. v. Peak Computer, Inc., 991 F.2d 511, 518 (9th Cir. 1993).

[102]. Id.

[103]. 334 F.3d 643, 653 (7th Cir. 2003).

[104]. In the case of Davidson, it will not make a difference to the liability of the defendants under the DMCA if more infringement is actionable as long as one act of infringement is actionable under the DMCA. However, the broader the interpretation of the ‘reasonable relationship’ between access and infringement, the more likely other cases will fall under the DMCA as well.

[105]. Davidson, supra note 6, at 633 n.3.

[106]. Chamberlain, supra note 2, at 1204.

[107]. See id.

[108]. 421 F.3d at 1319.

[109]. Id.

[110]. Sega, supra note 71, at 1515.

[111]. Id. at 1516.

[112]. See Sony, supra note 4, at 442.

[113]. Time-shifting referred to the practice of consumers copying television shows on their VCR's simply to watch them later at a more convenient time. Id. at 418.

[114]. Id.
[115]. Id. at 442.


[117]. See id. at *22 ¶ 16.

[118]. See Sony, supra note 4, at 442.

[119]. Id.

[120]. Of course, the defendants would have to prove that there were a ‘substantial’ number of legal players - whatever ‘substantial’ precisely means. See id.

[121]. See Sony, supra note 4, at 443, 446.


[123]. Id. at 1015.

[124]. Davidson, supra note 6, at 633, 636.

[125]. Napster, supra note 123, at 1015, 1016-17.

[126]. Id. at 1015.

[127]. See Sony, supra note 4, at 443, 446.

[128]. Id. at 443, 446.

[129]. See id. at 442.

[130]. Id. at 443.

[131]. Id. at 420.

[132]. Napster, supra note 123, at 1019.

[133]. See Sony, supra note 4, at 482-84.

[134]. Davidson, supra note 6, at 636.

[135]. Id. at 633 n.3.

[136]. Id. at 485-86.

[137]. Kelly, supra note 33.

[139]. See Napster, supra note 123, at 1023.

[140]. Napster, supra note 123, at 1023.

[141]. See id.

[142]. In re Aimster, supra note 5, at 650. (holding that Aimster could not escape vicarious infringement liability by willfully blinding itself to infringement of copyrighted music through encryption).

[143]. See 334 F.3d at 653.

[144]. Id.

[145]. The protocols in the ‘secret handshake’ from Battle.net were necessary to make bnetd.org work, however, as purely functional code, the protocols are probably not copyrightable. See, e.g., Sega, supra note 74, at 1526, 1528.

[146]. Davidson, supra note 6, at 1172-73.

[147]. Id. at 1527.

[148]. Napster, supra note 123, at 1023.

[149]. Sony, supra note 4, at 443.