

2020

## Immersive Virtual Reality: Minnesota Legislature's Opportunity to Protect Children from Sexual Exploitation by Enacting a Well-Defined Criminal Statute

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Wagner, Justine (2020) "Immersive Virtual Reality: Minnesota Legislature's Opportunity to Protect Children from Sexual Exploitation by Enacting a Well-Defined Criminal Statute," *Mitchell Hamline Law Review*: Vol. 46 : Iss. 2 , Article 5.

Available at: <https://open.mitchellhamline.edu/mhlr/vol46/iss2/5>

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**IMMERSIVE VIRTUAL REALITY: MINNESOTA  
LEGISLATURE’S OPPORTUNITY TO PROTECT  
CHILDREN FROM SEXUAL EXPLOITATION BY  
ENACTING A WELL-DEFINED CRIMINAL STATUTE**

Justine Wagner\*

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I. INTRODUCTION

“The ultimate promise of technology is to make us master of a world that we command by the push of a button.”<sup>1</sup>

As technology continues to develop at an exponential rate,<sup>2</sup> eventually it will give humans the power to “eras[e] the boundary between

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<sup>1</sup> Anusha Subramanian, *Why the Military*, ISA-VIT BLOG, (Aug. 1, 2018) (quoting Volker Grassmuck), <https://blog.isavit.chub/2018/08/01/whythemilitary/> [https://perma.cc/8ZGQ-BZVJ].

<sup>2</sup> *Big Idea: Technology Grows Exponentially*, BIG THINK (Mar. 21, 2011), <https://bigthink.com/think-tank/big-idea-technology-grows-exponentially> [https://perma.cc/U9HG-BAVQ].

the virtual world and the real-world.”<sup>3</sup> Traditionally, there are two types of virtual reality.<sup>4</sup> First, there is the virtual reality desktop version that presents three-dimensional images on a high-resolution computer screen.<sup>5</sup> Second, there is immersion virtual reality—the more common and rapidly expanding form of virtual reality.<sup>6</sup> This article focuses specifically on the immersive form of virtual reality due to the effects it has on users.<sup>7</sup>

These immersive virtual environments raise an infinite number of legal concerns.<sup>8</sup> Some of the more specific concerns within the criminal realm include: (1) whether the government can apply criminal laws in the virtual world; (2) how harm should be quantified in a virtual world; and (3) the procedural challenges of applying laws to virtual environments. This article focuses on these concerns and others in relation to protecting children from sexual exploitation by adult perpetrators in the ever-expanding immersive virtual realities.

Part II gives an overview of virtual realities and how immersive virtual reality users are affected by the technology. Part III explores current Minnesota criminal statutes that have the potential to apply in immersive virtual realities and discusses the various shortcomings of applying the existing statutes to a virtual world. Part IV considers First Amendment rights, specifically examining how freedom of speech may act as a barrier to protecting children in immersive virtual realities. Part V discusses practical and procedural challenges to applying criminal statutes in an immersive virtual world. Lastly, Part VI proposes a criminal statute for the Minnesota Legislature to apply to adults who sexually perpetrate against children in an immersive virtual reality.

## II. BACKGROUND

### A. Overview of Virtual Reality

Virtual reality is considered successful when it can trick users into thinking their virtual experiences are real,<sup>9</sup> part of which is accomplished

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<sup>3</sup> Robin Fretwell Wilson, *Sex Play in Virtual Worlds*, 66 WASH & LEE L. REV. 1127, 1132 (2009).

<sup>4</sup> Roya Bagheri, *Virtual Reality: The Real Life Consequences*, 17 U.C. DAVIS BUS. L.J. 101, 104 (2016).

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

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

<sup>7</sup> *Infra* Part II, Section B.

<sup>8</sup> Bagheri, *supra* note 4, at 108.

<sup>9</sup> Joshua Hansen, *Virtual Indecent Assault: Time for the Criminal Law to Enter the Realm of Virtual Reality*, 50 VICT. U. WELLINGTON L. REV. 57, 57 (2019).

through the use and personalization of avatars. True virtual experiences require full immersion in simulated worlds achieved via hardware—such as headsets—and software. Designers create virtual reality experiences by transporting users to three-dimensional environments where they can freely move and interact with one another.<sup>10</sup> Each user is able to move around in these virtual worlds by becoming an avatar.<sup>11</sup> These avatars, also known as “graphic proxies,” allow players to project an identity of their choosing in the virtual world.<sup>12</sup> Users are free to make their avatars younger or older than their real-world identity.<sup>13</sup> “[T]he diversity of avatar choices is highly-customizable,” especially in virtual realities such as *Second Life*.<sup>14</sup> Users can choose different hair, clothing, and body types.<sup>15</sup> “The choices users make when creating (and later when customizing) their avatar will have repercussions on their interactions with other users: selecting black hair, dark Victorian clothing and piercings is obviously making a different statement than opting for an athletic, tanned body in a swimsuit.”<sup>16</sup> In virtual reality, “[r]ather than controlling an avatar on a screen, the user becomes the avatar, and the physical movements of her body translate into the world she perceives around her.”<sup>17</sup> Avatars started out having a “cartoonish’ character,” but they are increasingly becoming more realistic.<sup>18</sup>

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<sup>10</sup> *Virtual Reality*, INTERACTION DESIGN FOUNDATION, <https://www.interaction-design.org/literature/topics/virtual-reality> [<https://perma.cc/E8CP-GTVM>].

<sup>11</sup> Mark A. Lemley & Eugene Volokh, *Law, Virtual Reality, and Augmented Reality*, 166 U. PA. L. REV. 1051, 1059 (2018).

<sup>12</sup> Alec Levine, *Play Harms: Liability and the Play Conceit in Virtual Worlds*, 41 MCGEORGE L. REV. 929, 933 (2010).

<sup>13</sup> Nicholas Ducheneaut et al., *Body and Mind: A Study of Avatar Personalization in Three Virtual Worlds*, INT’L CONFERENCE ON HUMAN FACTORS IN COMPUTING SYS. 1151, 1153 (2009).

<sup>14</sup> *Id.* at 1151. Second Life is a three-dimensional online virtual world where people use avatars to perform similar activities people do in real-life such as: buying and selling stuff, gambling, listening to music, flirting, watching movies, and having sex. Kristin Kalning, *‘Second Life isn’t a game, what is it?’*, NBC NEWS (Mar. 27, 2020, 12:50PM), [http://www.nbcnews.com/id/17538999/ns/technology\\_and\\_science-games/t/if-second-life-isnt-game-what-it/#.Xn46ti2ZNok](http://www.nbcnews.com/id/17538999/ns/technology_and_science-games/t/if-second-life-isnt-game-what-it/#.Xn46ti2ZNok). There is no objective but rather it is “an entirely open-ended experience.” *Id.*

<sup>15</sup> *Id.*

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

<sup>17</sup> Lemley, *supra* note 11, at 1059.

<sup>18</sup> Wilson, *supra* note 3, at 1139.



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Additionally, virtual realities “create[] the illusion of continuity” because even when a player is absent from the virtual environment, the program can recall the location of the user’s avatar and recalls objects the avatar owns.<sup>20</sup> The illusion of continuity makes it possible for users to have an ongoing existence in a virtual reality,<sup>21</sup> which helps to create a sense of attachment.<sup>22</sup>

Arguably, unstructured virtual social worlds pose more significant harm to users than structured virtual environments, because of the similarity to the reality we currently live in and the unrestrained freedom users have to let their imaginations and fantasies run wild. Virtual realities emerged as structured social environments for play communities<sup>23</sup> but developed into environments that promise more than our real-world could ever hope to offer. Structured virtual realities give players a predetermined objective to complete.<sup>24</sup> “For example, *World of Warcraft* offers players fixed quests

<sup>19</sup> Greg Nichols, *Wanted: Realistic Avatars for Virtual Reality Meetings*, ZDNET (Apr. 10, 2019), <https://www.zdnet.com/article/wanted-realistic-avatars-for-virtual-reality-meetings/> [https://perma.cc/CR6S-LZDK]. The left image is a picture of the actual user while the right image is the user’s avatar. The comparison is meant to illustrate avatars’ realness today. Users interacting with avatars that so closely resemble the humans we interact with in our natural world every day can enhance the authenticity of a user’s virtual reality experiences. *Id.*

<sup>20</sup> Levine, *supra* note 12, at 932.

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

<sup>22</sup> *See id.* at 933 (describing how virtual realities allow users to form powerful attachments to their virtual communities).

<sup>23</sup> *Id.* at 931–33.

<sup>24</sup> *Id.* at 932.

and opportunities for combat.”<sup>25</sup> Unstructured virtual realities are “social worlds.”<sup>26</sup> Virtual reality designers of unstructured environments enable the player to define the environment or objectives.<sup>27</sup> An example of an unstructured environment is the game called *Second Life*.<sup>28</sup> The creator of *Second Life*, Linden Labs, designs the backdrop of the landscape, but everything else “evolve[s] organically” as it is imagined by the game’s users.<sup>29</sup> This allows for the collective creation of users as they are able to “build and see the results instantaneously.”<sup>30</sup> Shortly after *Second Life*’s release, one of Linden Labs’ founders, Philip Rosedale,<sup>31</sup> described the nature of the game in a 2003 press release: “Our residents have built thousands of unique structures to explore—museums, nightclubs, even entire cities. Over 3,000 people have attended in-world parties, contests, events, and classes. And the in-world economy is booming—residents have bought and sold everything from designer fashions to sophisticated weapons in over 30,000 transactions.”<sup>32</sup> Rosedale’s statements reflect Linden Labs’ vision of *Second Life* becoming an alternative existence that “strives to be better” than the physical world we live in.<sup>33</sup> By October 2008, *Second Life* reported having fifteen million individual accounts,<sup>34</sup> which shows that *Second Life*’s user-base continues to grow.

Rosedale’s description did not overestimate *Second Life*’s ability to mirror the physical world we live in.<sup>35</sup> The user’s ability to obtain real-world economic wealth in *Second Life*’s virtual environment demonstrates this.<sup>36</sup>

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<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

<sup>27</sup> *Id.*

<sup>28</sup> *Id.* As the demand for newer technology in virtual reality increases, creators have expanded the concept of *Second Life* to newer virtual worlds. For example, *Second Life* is the predecessor to Linden Labs’ updated virtual reality, *Sansar*. See generally <http://www.sansar.com> [https://perma.cc/S5HK-EEEE]. Additionally, in 2020, Facebook will release its own version of *Second Life* called *Facebook Horizon*. See Josh Constine, *Facebook Announces Horizon, a VR Massive-Multiplayer World*, TECH CRUNCH (Sept. 25, 2019), <https://techcrunch.com/2019/09/25/facebook-horizon/> [https://perma.cc/8TD5-5K5F].

<sup>29</sup> Susan W. Brenner, *Fantasy Crime: The Role of Criminal Law in Virtual Worlds*, 11 VAND. J. ENT. & TECH. L. 1, 34 (2008).

<sup>30</sup> *Id.* at 33.

<sup>31</sup> *Id.* at 32.

<sup>32</sup> *Id.* at 33.

<sup>33</sup> *Id.* at 33–34.

<sup>34</sup> *Id.* at 35. The number of *Second Life*’s accounts does not accurately indicate the number of users as people can have more than one account and some users are inactive. *Id.*

<sup>35</sup> Wilson, *supra* note 3, at 1140 (describing how the boundaries between the virtual world and the real-world are fading and may soon disappear entirely).

<sup>36</sup> See Levine, *supra* note 12, at 933–35 (discussing economic activity in virtual realities).

In 2006, a *Second Life* resident, Anshe Chang, made the cover of *Business Week* because she was able to earn money in the game that exchanged to about one million dollars in real-world currency by selling real estate that only existed in virtual reality.<sup>37</sup> The ability to earn wealth in these virtual realities leads one to wonder what other pursuits individuals will explore? Perhaps people will pursue sex.

Similar to the natural world, sex is prevalent in immersive virtual realities. Whole spaces of *Second Life* are dedicated to sex play.<sup>38</sup> Many users are extremely invested in their avatar's sexuality, which is shown through the "purchasing of genitalia, sex toys, and skimpy outfits."<sup>39</sup> Sexual interactions in immersive virtual realities are far more interactive than someone typing "words describing sex acts" on a screen.<sup>40</sup>

[T]he players in virtual sex games guide the nature of the exchange, which unfolds graphically on their screens as they play. A player's avatar can seduce her partner, undressing provocatively or pole dancing if she prefers. Or she can get down to business without the foreplay, selecting a sexual position which then continuously loops until the avatar is directed to do something further.<sup>41</sup>

In fact, some may argue the porn industry has been the leader in the development of virtual realities.<sup>42</sup>

A significant issue in immersive virtual realities is due to the use of avatars, users in virtual worlds lack the ability to receive physical cues of other users' actual ages.<sup>43</sup> This possible disjunction between users' virtual age and their real age leads to concerns about the ability to maintain appropriate interactions between adults and children in the virtual world. In virtual realities, adult and child interactions can occur in different scenarios based on the identity of the avatars.<sup>44</sup> The complexity of interactions between users exists because each person essentially has two identities: their real life self and their avatar.<sup>45</sup> This article is only concerned with real-world

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<sup>37</sup> *Id.* at 930.

<sup>38</sup> Wilson, *supra* note 3, at 1138. Additionally, sites such as RedLightCenter.com, allow users to not only have virtual sex but to meet in the real-world if participants choose. *Id.* at 1140.

<sup>39</sup> *Id.* at 1138.

<sup>40</sup> *Id.* at 1141.

<sup>41</sup> *Id.* at 1142.

<sup>42</sup> David M. Ewalt, *The First Real Boom in Virtual Reality? It's Pornography*, WALL ST. J. (July 11, 2018), <https://www.wsj.com/articles/the-first-real-boom-in-virtual-reality-its-pornography-1531320180>.

<sup>43</sup> Wilson, *supra* note 3, at 1169.

<sup>44</sup> *See id.* at 1141.

<sup>45</sup> *Id.* at 1132. The Supreme Court found a statute banning sexually explicit images portraying a minor where no actual child was used in the production was unconstitutional. *See Ashcroft*

adults interacting in a sexually inappropriate manner with real-world children, despite the identity of the avatar. In the near future, preemptive protective action of these adult-child interactions in immersive virtual realities will become vital because the use of these virtual worlds will continue to grow, act as a platform for sexual predators to groom children, and allow users to embellish sexual fantasies—some which may have harmful effects on children.

Virtual environments raise concerns about sexual predators using virtual reality as a tool for grooming children.<sup>46</sup> “Grooming occurs when an adult intentionally befriends a minor [online or in person] and establishes an emotional connection in order to lower the minor’s inhibitions in preparation for illegal sexual contact.”<sup>47</sup> Grooming increases the likelihood that children will perform sexual acts.<sup>48</sup> Although this is not unlike other internet websites, immersive virtual environments pose more risks due to users’ ability to embellish sexual fantasies and virtual environments’ effects on their users.<sup>49</sup>

Virtual reality gives people a space to embellish sexual fantasies that real-world society rejects, such as the sexual predation of a child, because these virtual realities are not well-regulated.<sup>50</sup> These virtual worlds are designed for users to engage in fantasy.<sup>51</sup> Thus, an adult that may not sexually prey on children in real life—simply because the perpetrator fears being caught—may take advantage of an immersive virtual reality’s failure to regulate such conduct. For instance, a crime correspondent, Jason Farrell, wanted to test *Second Life*’s restriction on age play.<sup>52</sup> Restrictions on age play mean that *Second Life* forbids sexual acts involving a child-like avatar.<sup>53</sup>

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*v. Free Speech Coal.*, 535 U.S. 234 (2002). This is different than the situations this article is discussing because here, actual children would be participants.

<sup>46</sup> Kelsey K. Chetosky, *Minnesota v. Muccio, The Constitutionality of Minnesota’s Sexual Grooming Law*, 114 NW. U. L. REV. ONLINE 1, 4 (2019).

<sup>47</sup> *Id.*

<sup>48</sup> *See id.* at 2–3 (discussing how online platforms make children more susceptible to grooming by adult predators).

<sup>49</sup> *See Wilson, supra* note 3, at 1140 (noting that due to the use of avatars, it is difficult to tell who is engaged in virtual sex games).

<sup>50</sup> *See id.* at 1162–63 (stating that the use of avatars which obfuscate the actual user’s age may make it difficult, if not impossible, to regulate virtual sex involving minors).

<sup>51</sup> *See generally* Levine, *supra* note 12, at 932 (stating that *Second Life* and similar games are unstructured and “like ‘playing with LEGOs online’”); Brenner, *supra* note 29, at 34 (stating that the world in *Second Life* is “imagined and created by its Residents”).

<sup>52</sup> Wilson, *supra* note 3, at 1137.

<sup>53</sup> *Id.* at 1135. Specifically, *Second Life* does not allow users to (1) engage in sexual or lewd acts with an avatar that appears to represent a minor; (2) promote behavior like placing child-



First, Farrell “present[ed] . . . a virtual version of himself, a middle-aged man” at a virtual playground in *Second Life* designed to attract children.<sup>54</sup> He was not approached by anyone.<sup>55</sup> Next, Farrell returned to the same area except he was using an avatar resembling a ten-year-old girl, and he was overwhelmed with messages from other users.<sup>56</sup> An adult male avatar offered to bring Farrell’s avatar “to his private virtual home and, like a child molester in the real-world, he put cartoons on the virtual TV.”<sup>57</sup> The male avatar took Farrell’s child-like avatar into a bedroom with another adult female avatar and asked Farrell’s avatar to undress.<sup>58</sup> The man told Farrell he “liked young girls in real life.”<sup>59</sup> When Farrell pressed him for more information, the man removed Farrell’s avatar from his home in virtual reality.<sup>60</sup> Obviously, Farrell was not a real-world child user, but he easily could have been. Additionally, although *Second Life* has restrictions on age play,<sup>61</sup> it appears, at least in Farrell’s situation, that nothing would have stopped a forbidden act from unfolding.

At first glance, the problems discussed above might be ignored as a gamer’s issue; however, virtual realities are quickly expanding beyond their initial play purposes,<sup>62</sup> which means that non-participation will soon not be an option and these issues will affect everyone. For example, in the future, immersive virtual realities will most certainly infuse every aspect of our lives.<sup>63</sup> They will be used for work, sales, education, exercise, psychotherapy, and socializing in general.<sup>64</sup> Additionally, virtual realities’ ability to create empathy on a whole new technological level makes it the “ultimate fundraising tool.”<sup>65</sup> One example of this was “Project Syria,” which used virtual reality to transport the user to a scene of child refugees.<sup>66</sup>

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like avatars close to sexualized graphics or objects; or (3) graphically depict children in a lewd or sexual manner. *Id.* at 1137.

<sup>54</sup> *Id.* at 1137.

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

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

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

<sup>58</sup> *Id.* at 1137-38.

<sup>59</sup> *Id.* at 1138.

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

<sup>61</sup> *Id.* at 1137.

<sup>62</sup> Levine, *supra* note 12, at 931.

<sup>63</sup> Farhad Manjoo, *If You Like Immersion, You’ll Love This Reality*, N.Y. TIMES (Apr. 2, 2014), <https://www.nytimes.com/2014/04/03/technology/personaltech/virtual-reality-perfect-for-an-immersive-society.html> [https://perma.cc/2GTA-C55E].

<sup>64</sup> Lemley, *supra* note 11, at 1055.

<sup>65</sup> Mary Anne Franks, *The Desert of the Unreal: Inequality in Virtual and Augmented Reality*, 51 U.C. DAVIS L. REV. 499, 509-10 (2017).

<sup>66</sup> *Id.*

Additionally, a virtual reality's empathetic nature make it a tool for bias training.<sup>67</sup>

In a series of studies, psychology professor Manos Tsakiris measured white adults' racial biases before and after experiencing virtual reality environments that created the illusion of being black. Using the associational Implicit Association Test ("IAT"), which tests for unconscious bias using the strength of associations between negative and positive concepts with various groups of people, Tsakiris found that the white participants' negative biases against black people diminished after undergoing the simulation.<sup>68</sup>

Some police departments have already implemented this technology in their training.<sup>69</sup> Developers of these virtual worlds promise to provide billions of people with virtual social experiences of the wealthy such as "touring the Louvre, sailing the sun-dappled coast of California, or simply sitting in a meadow beneath a clear blue sky free of smog and pollution"<sup>70</sup> without leaving their houses. Experts caution that "as virtual-reality platforms become mainstream and affordable, the pull of spending more time in virtual reality may prove hard to resist."<sup>71</sup>

### *B. Effect of Virtual Reality on Users*

Expanding technology has allowed users to experience a level of immersion which is unprecedented. "The effectiveness of virtual reality hinges on the illusion of embodiment," which means that a user's sense of self is placed within the virtual body.<sup>72</sup> Creators of virtual realities have expressed concerns about "risks run by users when they are subjected to feelings of inhabiting a body that is not their own."<sup>73</sup> For instance, users that get slapped in virtual reality have responded with skin conductance and heart rate levels consistent with being slapped in real life.<sup>74</sup> Similar results occurred even when the user was male and his avatar was female,<sup>75</sup> which speaks to the extent of the illusion of embodiment, regardless of the avatar's identity. Experts have hypothesized that the brain is successfully tricked into

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<sup>67</sup> *Id.* at 510-11.

<sup>68</sup> *Id.*

<sup>69</sup> *Id.* at 511.

<sup>70</sup> *Id.* at 534.

<sup>71</sup> *Id.* at 533.

<sup>72</sup> Hansen, *supra* note 9, at 65.

<sup>73</sup> Daniel Oberhaus, *We're Already Violating Virtual Reality's First Code of Ethics*, VICE (Mar. 6, 2016), [https://www.vice.com/en\\_us/article/yp3va5/vr-code-of-ethics](https://www.vice.com/en_us/article/yp3va5/vr-code-of-ethics) [<https://perma.cc/28Y7-48FW>].

<sup>74</sup> Lemley, *supra* note 11, at 1065.

<sup>75</sup> *Id.*

believing that events in virtual reality are actually happening.<sup>76</sup> According to Howard Rose, Chief Executive Officer of Deep Stream Virtual Reality, “[t]he human brain encodes VR as a place we’ve been rather than a thing we’ve seen.”<sup>77</sup> Creators predict this technology will change humanity’s understanding of concepts such as consciousness, selfhood, and authenticity.<sup>78</sup>

In fact, numerous users have recalled the authenticity of their immersive virtual experiences and how their bodies reacted to it. For instance, one user recalled as he ran across a virtual plank and fell into the virtual pit below how his real-world body “crumpled” in response to the fall.<sup>79</sup> Additionally, a large portion of other users who have experienced a similar plank scenario refused to even walk out onto the board because it seemed too dangerous.<sup>80</sup> Essentially, these users’ survival instincts kicked in telling them to stop. For the brave users that stepped out onto the plank and allowed themselves to intellectually understand they could step off the plank without injury to their real life bodies, their bodies still responded to their initial step off the virtual plank by leaning forward as if they were falling.<sup>81</sup> Our bodies’ response to immersive virtual environments is essential to

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<sup>76</sup> Franks, *supra* note 65, at 506.

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

<sup>78</sup> Oberhaus, *supra* note 73.

<sup>79</sup> Manjoo, *supra* note 63.

<sup>80</sup> Lemley, *supra* note 11, at 1064.

<sup>81</sup> *Id.* Additional studies have been performed to show that a user responds to their virtual environment in a way that is similar to the real world, such as:

One study used VR to replicate the Milgram shock experiment—a famous psychology experiment in which a subject is asked to press a button to electrically shock a stranger in another room. There are no actual shocks delivered with the button, but during the experiment, the stranger cries out in pain and the subject hears those cries.

In the original Milgram experiment the test subjects thought they were administering real electric shocks to real people. Not so in this experiment. In spite of the fact that all participants in the VR study knew that neither the stranger nor the shocks were real, the participants “tended to respond to the situation at the subjective, behavioural and physiological levels [as measured by skin conductance and heart rate] as if it were real.” Those subjects who interacted with the stranger via text screen did not produce comparable levels of response.

*Id.* at 1065. The participants in the original experiment were not aware of the fact that the shocks they thought they were imposing upon another by pushing the button were not being administered but rather a recording of screams was being played. However, in the virtual reality experiment, the participants knew it was a recording of screams, but nonetheless, they were hesitant to push the button. The VR users’ hesitance even among actual knowledge speaks to the authentic nature of virtual reality users’ experience and the disjuncture between their knowledge of what is really happening and the authenticity of their VR experience.

understanding concepts such as harm and how our real-life perception of harm transfers to harm in these virtual worlds.

Due to the illusion of embodiment, unwanted sexual acts on the user's avatar may have a harmful effect on the actual person.<sup>82</sup> Research shows that harassment feels significantly worse and is far more traumatic in virtual reality than in other digital worlds.<sup>83</sup> In 2016, Jordan Belamire spoke out about an incident in *QuiVi*, a virtual multi-user game, where another user's avatar started rubbing her avatar's groin area.<sup>84</sup> Belamire told the other player to stop, but he just proceeded to chase her around while continuing to grab her avatar's chest and crotch area.<sup>85</sup> Belamire acknowledged that although she was not being physically touched, the violation of her body felt real.<sup>86</sup> Belamire's experience shows that the feeling of being sexually assaulted can be as authentic as if it occurred in the real-world.<sup>87</sup> This suggests that child victims may experience similar trauma.

The issue of sexual assault in virtual realities becomes even more problematic as haptic technology becomes mainstream. Haptic technology will allow users to physically feel things with their human body as a reaction to things that happen to them in the virtual worlds. Haptic technology's purpose is to simulate the sensation of touch.<sup>88</sup> An example of existing haptic technology is when a PlayStation Dual Shock controller vibrates as you drive over bumps or hit something in the game.<sup>89</sup> More advanced haptics require the user to wear a full body suit to feel full-sensory feedback, bringing the interactivity of virtual realities to a new level.<sup>90</sup> Haptic technology can also be used in sex aids known as teledildonics.<sup>91</sup> The use of virtual realities for sexual experiences will likely increase as haptic technology is implemented into these virtual worlds.<sup>92</sup> Rapid developments in and increasing use of immersive virtual reality will soon require society to confront the fact that current statutes are ill-equipped to protect children from sex crimes in virtual environments.<sup>93</sup>

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<sup>82</sup> *Id.* at 1083.

<sup>83</sup> Franks, *supra* note 65, at 527.

<sup>84</sup> Hansen, *supra* note 9, at 61.

<sup>85</sup> Ryan Esparza, "The Way I Felt": Creating a Model Statute to Address Sexual Offenses Which Utilize Virtual Reality, 4 CRIM. L. PRAC. 25, 27 (2018).

<sup>86</sup> Hansen, *supra* note 9, at 61.

<sup>87</sup> *See id.*

<sup>88</sup> *Getting to Grips with Haptic Technology*, VIRTUAL REALITY SOCIETY, <https://www.vrs.org.uk/virtual-reality-gear/haptic/> [<https://perma.cc/AH3C-WZZM>].

<sup>89</sup> Lemley, *supra* note 11, at 1094.

<sup>90</sup> Esparza, *supra* note 85, at 36.

<sup>91</sup> Lemley, *supra* note 11, at 1094.

<sup>92</sup> *See generally id.* (discussing sexual assault in virtual realities using haptic technology).

<sup>93</sup> *See infra* Part III.

### III. CURRENT APPLICABLE MINNESOTA STATUTES

Due to the State's interest in protecting children, the Minnesota Legislature is uniquely positioned to become a leader in developing crime legislation that addresses adults who prey on children in immersive virtual realities.<sup>94</sup> This section discusses Minnesota Criminal Statutes sections 609.342, 609.344, 609.341, 609.343, 609.345, 609.3451, 617.23, 617.246, and 609.352. The next paragraphs address the language barriers and problems that will arise when trying to apply this language to immersive virtual realities. Some of this problematic language includes terms such as sexual penetration, touch, presence, and human being. This section further argues that these statutes do not address the fact that the real-life cues one normally has to judge a person's true age are not available in virtual reality settings due to the use of avatars.

First, Minnesota Statutes for Criminal Sexual Conduct in the First and Third Degree define the crime as an adult engaging in "sexual penetration" with a minor.<sup>95</sup> Sexual penetration occurs when any part of the actor's body or an object is used for (1) sexual intercourse, anal intercourse, cunnilingus,<sup>96</sup> or fellatio; or (2) even a slight intrusion into the victim's genitals or anus.<sup>97</sup> An adult perpetrator is not going to be able to penetrate the child's real-life body in virtual reality because the users are not in the same physical space. However, the adult may be able to penetrate the child's avatar through the use of the adult's avatar or an object in the virtual reality. The question for the judicial branch to interpret becomes whether people's avatars can be seen as an extension of their physical bodies. For instance, in a tortious prima facie case for battery, the contact element can be satisfied even if the wrongdoer makes contact with "any object that is closely and physically connected to the plaintiff's body, and thus is customarily

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<sup>94</sup> Minnesota's Constitution states, regarding particular subjects, when a general law is applicable a specific law shall not be enacted. MINN. CONST. art. XII, §1. The Judicial Branch shall interpret whether a general law is applicable. *Id.* However, the judiciary's interpretation power has its limits since it is the sole responsibility of the legislative branch to create new laws. *See* MINN. STAT. §645.16 (2019) (stating that the legislative intent for statutes is controlling). *See generally The Three Branches of Minnesota State Government*, MINNESOTA HOUSE OF REPRESENTATIVES, <https://www.house.leg.state.mn.us/hinfo/govser/GOVSER9.pdf> [<https://perma.cc/6R4E-XVMU>] (explaining separation of powers doctrine and the duties of each branch).

<sup>95</sup> *See* MINN. STAT. § 609.342 subdiv. 1 (2019); MINN. STAT. § 609.344 subdiv. 1 (2019). It is important to note the age of consent in Minnesota is sixteen. *See* MINN. STAT. § 609.342 subdiv. 1(b) (2019).

<sup>96</sup> Cunnilingus means "stimulation of the female genitals using the tongue or lips." *Cunnilingus*, LEXICO, <https://www.lexico.com/en/definition/cunnilingus> [<https://perma.cc/RNP4-8NEV>].

<sup>97</sup> MINN. STAT. § 609.341 subdiv. 12 (2019).

considered to be within the scope of the plaintiff's right of bodily autonomy."<sup>98</sup> This would require courts to decide that avatars are so closely connected to users that their right of personal autonomy is extended to their avatar. This may be a substantial leap for any court to make because there is a significant real-world physical distance between virtual reality users. If the avatar is not an extension of the real-world actor's body, then sexual penetration cannot be achieved, and these two statutes would not apply to sexual interactions between an adult and a child in virtual environments.

Second, Minnesota's Statutes for Criminal Sexual Conduct in the Second or Fourth degree define the crime as sexual contact between an adult and a minor.<sup>99</sup> Sexual contact involves "touching" the victim.<sup>100</sup> This ranges from touching the clothing covering the victim's intimate parts to the intentional touching of the victim's actual intimate parts.<sup>101</sup> Intimate parts are defined as "the primary genital area, groin, inner thigh, buttocks, or breast of a human being."<sup>102</sup> Thus, any part of these statutes pertaining to intimate parts will likely not be satisfied because the touching of an avatar will not satisfy the "human being" language. Consequently, inappropriate sexual interactions between a real-life adult and real-life child in virtual reality via their avatars would not meet the "sexual contact" requirement for a conviction for Criminal Sexual Conduct in the Second or Fourth degree.<sup>103</sup>

Third, Minnesota's existing criminal statutes pertaining to inappropriate sexual interactions with a minor include the word "presence." Under Minnesota Statute section 609.3451 subdivision 1(2), "fifth degree criminal sexual conduct includes 'engag[ing] in . . . lewd exhibition of the genitals in the presence of a minor under the age of 16, knowing or having reason to know the minor is present.'"<sup>104</sup> Another potentially applicable statute that uses the word "presence" is the criminal statute against indecent

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<sup>98</sup> See generally RESTATEMENT (THIRD) OF INTENTIONAL TORTS §101 cmt. e (AM. LAW INST. 2012). "Examples include an object that the plaintiff is holding, or the plaintiff's clothing, or the chair upon which the plaintiff is sitting." *Id.*

<sup>99</sup> MINN. STAT. § 609.343 subdiv. 1 (2019); MINN. STAT. § 609.345, subdiv. 1 (2019). Fifth Degree Criminal Sexual Conduct also uses sexual contact in the statute's language, however, if an actor fails to meet the definition of sexual contact there is a second option. The alternative language states an actor is guilty if, "the person engages in masturbation or lewd exhibition of the genitals in the presence of a minor under the age of 16, knowing or having reason to know the minor is present." MINN. STAT. § 609.3451 subdiv. 1(2) (2019).

<sup>100</sup> MINN. STAT. § 609.341, subdiv. 11(a), (b) (2019).

<sup>101</sup> *Id.*

<sup>102</sup> MINN. STAT. § 609.341, subdiv. 5 (2019).

<sup>103</sup> MINN. STAT. § 609.342 subdiv. 1 (2019); MINN. STAT. § 609.345 subdiv. 1 (2019).

<sup>104</sup> MINN. STAT. § 609.3451 subdiv. 1(2) (2019); see also *State v. Decker*, 916 N.W.2d 385, 387 (Minn. 2018).

exposure.<sup>105</sup> Minnesota Statute section 617.23 subdivision 1(1) proclaims that “[i]ndecent exposure includes ‘willfully and lewdly expos[ing] the person’s body, or private parts . . . .’”<sup>106</sup> A hypothetical defendant could argue that at the time the crime occurred, he or she was not in the physical presence of a minor in a virtual reality setting.

However, Minnesota courts have expanded the term presence to include an online setting.<sup>107</sup> For instance, in *State v. Decker*, Decker was a thirty-four-year-old male who lived with the parents of a child whom the victim, M.J., babysat. M.J. was fourteen years old.<sup>108</sup> On September 8, 2014, after some initial conversation, Decker sent a picture of his erect penis to M.J. via Facebook Messenger.<sup>109</sup> Decker was charged with fifth-degree criminal sexual conduct and indecent exposure.<sup>110</sup> Decker argued he did not meet the “presence” requirement of either criminal statute because he was not in the same physical location as the victim.<sup>111</sup> Furthermore, he claimed he only sent a likeness of his penis and did not expose his actual penis.<sup>112</sup> These are both arguments that an adult who has sexually preyed upon a minor in virtual reality could make because there is a lack of “physical location,” and an avatar could be described as a likeness of the perpetrator, rather than his or her actual body. In *Decker*, the court held that public policy supported an interpretation of “presence” as encompassing online activity with a child.<sup>113</sup> The court further decided that even a photograph or likeness of Decker’s genitals met the statutory definition, which was “to display” or “to show outwardly.”<sup>114</sup>

Although the holding in *Decker* is promising for application to virtual realities, it does not solve the problem of having applicable statutes for all potentially inappropriate interactions between an adult and a child in virtual realities. Fifth Degree Criminal Sexual Conduct would only be applicable in situations where the actor has masturbated or made a “lewd exhibition of their genitals,” as that is what the language of the statute

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<sup>105</sup> MINN. STAT. § 617.23 subdiv. 1(1) (2019).

<sup>106</sup> *Id.*; *Decker*, 916 N.W.2d at 387.

<sup>107</sup> *See generally Decker*, 916 N.W.2d at 385 (holding that the evidence was sufficient to support the defendant’s convictions for fifth-degree sexual assault and indecent exposure when he sent sexually explicit images and simultaneously communicated with a fourteen-year-old victim).

<sup>108</sup> *Id.* at 386.

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

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

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

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

<sup>113</sup> *Id.*

<sup>114</sup> *Id.* at 388.

requires.<sup>115</sup> Thus, children would not be protected from other situations involving inappropriate sexual conduct similar to Belamire's experience,<sup>116</sup> where adult users do not expose their genitals or their avatar's genitals but instead resort to groping. Moreover, a child who is shown an adult's genitals in virtual reality is going to be far less traumatized than a child who is sexually touched by an adult in virtual reality, due to the illusion of embodiment, which should result in harsher punishment to the offender.<sup>117</sup>

Next, under Minnesota Statute section 617.246, subdivision 2, "[i]t is unlawful for a person to . . . use or permit a minor to engage in . . . posing or modeling alone or with others in any sexual performance or pornographic work if the person knows or has reason to know that the conduct intended is a sexual performance or a pornographic work."<sup>118</sup> Sexual performance is defined as "any play, dance or other exhibition presented before an audience or for purposes of visual or mechanical reproduction that uses a minor to depict actual or simulated sexual conduct as defined by clause (e)."<sup>119</sup> Clause (e) goes on to give examples of sexual conduct which includes: sexual intercourse between human beings; sadomasochistic abuse; masturbation; lewd exhibitions of the genitals; or physical contact with clothed or unclothed pubic areas or buttocks of a human.<sup>120</sup> It may be incredibly challenging for a court to expand language that the Legislature clearly intended to be applied to human beings to a user's avatar in virtual reality.<sup>121</sup> Moreover, the "pornographic work" categorization of this statute also requires the language of sexual performance or conduct to be met.<sup>122</sup> Additionally, this statute does not

<sup>115</sup> MINN. STAT. § 609.3451 subdiv. 1(2) (2019).

<sup>116</sup> Hansen, *supra* note 9, at 61.

<sup>117</sup> See generally Joseph E. Kennedy, *Monstrous Offenders and the Search for Solidarity Through Modern Punishment*, 51 HASTINGS L.J. 829, 837 (2000) (discussing why society punishes people).

Punishment's role in expressing and regenerating social values means, in essence, that reasoning about direct costs and benefits applies in only a limited way to punishment practices. Societies punish even when the costs of punishment outweigh the direct harms of the crime because punishment is necessary to uphold the moral order.

In reacting to particular crimes, punishment has the task of upholding the overarching moral order and of preventing its erosion and collapse, so even where the costs of punishing an offence appear greater than the direct harms caused by it, there is always another consideration weighing in the balance which indicates that punishment is required.

*Id.*

<sup>118</sup> MINN. STAT. § 617.246, subdiv. 2(a) (2019).

<sup>119</sup> MINN. STAT. § 617.246, subdiv. 1(d) (2019).

<sup>120</sup> MINN. STAT. § 617.246, subdiv. 1(e) (2019).

<sup>121</sup> See MINN. STAT. § 645.16 (2019).

<sup>122</sup> MINN. STAT. § 617.246 subdiv. 1(f) (2019).



address the scenario where a minor uses an adult avatar to shield their true identity.<sup>123</sup> This statute serves as yet another example of the inapplicability of current Minnesota Criminal Statutes to a virtual environment wherein inappropriate sexual acts between an adult and a child can occur. Lastly, Minnesota Statute section 609.352, subdivision 2(a) paragraph 1-3, makes it a felony for an adult to use:

the Internet, a computer, computer program, computer network, computer system, . . . or other electronic device . . . to commit any of the following acts, with the intent to arouse the sexual desire of any person . . . (1) soliciting a child or someone the person reasonably believes is a child to engage in sexual conduct; (2) engaging in communication with a child or someone the person reasonably believes is a child, relating to or describing sexual conduct; or (3) distributing any material, language, or communication, including a photographic or video image, that relates to or describes sexual conduct to a child or someone the person reasonably believes is a child.<sup>124</sup>

At first glance, this statute appears promising for application to virtual realities; however, there are numerous issues specific to virtual realities that this statute fails to address.

First, although the person being solicited can be a fictional persona, it does not address the issues that the offender must reasonably believe the victim is a child or the lack of physical cues to a person's age within a virtual world. "Solicit[ation]" means commanding, entreating, or attempting to persuade a specific person in person, by telephone, by letter, or by computerized or other electronic means."<sup>125</sup> The language of "specific person" used in the definition of solicitation does not mean an actual person.<sup>126</sup> The defendant in *Coonrod* was charged with soliciting a child to engage in sexual conduct after communicating via e-mail with an undercover police officer who was using a fictitious computer persona of a fourteen-year-old girl.<sup>127</sup> In *Coonrod*, the court held that electronic messages directed at a specific computer persona belonging to someone who the actor reasonably believed to be a child satisfied the "specific person" requirement in the statute.<sup>128</sup> Thus, since an avatar is a fictional computer persona, it is likely an avatar would count as a "specific person" under the statute. However, this does not address the issue of whether the actor reasonably

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<sup>123</sup> *Id.*

<sup>124</sup> MINN. STAT. § 609.352 subdiv. 2(a) (2019).

<sup>125</sup> MINN. STAT. § 609.352 subdiv. 1(c) (2019).

<sup>126</sup> *State v. Coonrod*, 652 N.W.2d 715, 722 (Minn. Ct. App. 2002).

<sup>127</sup> *Id.* at 717.

<sup>128</sup> *Id.* at 723.

believed the avatar was a child, especially if the child was using an adult-like avatar.<sup>129</sup>

Based on current case law, the State would be tasked with an unmanageable burden to prove the defendant reasonably believed he or she was interacting with a child disguised behind an adult-like avatar. In *Moser*, the Minnesota Supreme Court held that the child-solicitation statute violated substantive due process because strict liability was imposed by eliminating the mistake-of-age defense.<sup>130</sup> The court reasoned it was unreasonable to expect the defendant to verify the actual age of the person solicited when the solicitation occurred solely over the internet.<sup>131</sup> Furthermore, the statute was not narrowly tailored to serve the government's compelling interest of protecting children from sexual exploitation.<sup>132</sup> This will be problematic when the use of an avatar is involved because there are no physical cues to assess the age of the actual user like there are in the real-world. Reasonable belief would only be satisfied in circumstances where the child user indicates to the adult user the child's true identity—which would be unlikely—or where an adult is interacting with a child-like avatar controlled by a child user. Thus, a statute specifically designed for application in the virtual reality would need to address this remaining issue.

Next, “solicitation is ‘an inchoate activity[,]’” meaning a conviction under this charge for sexual conduct in immersive virtual environments will fail to provide the full scope of protection needed.<sup>133</sup> Inchoate crimes can be categorized as anticipatory crimes, or crimes that involve preliminary conduct directed toward some other offense.<sup>134</sup> Thus, an inchoate crime imposes liability when the actor does not cause harm.<sup>135</sup> The child-solicitation statute is designed to criminalize the process of “grooming” a child to later engage in criminal sexual conduct, sex trafficking, or the creation of child pornography.<sup>136</sup> Thus, in a circumstance where a child's avatar is groped by an adult user, the purpose of Minnesota's child-solicitation statute would be redundant because at that point, the child has already been touched. Furthermore, the application of only this statute in

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<sup>129</sup> This raises a counterargument that a perpetrator may not be interested in adult-like avatars. Arguably, this may not be true, especially if the perpetrator had knowledge the user was a child.

<sup>130</sup> *State v. Moser*, 884 N.W.2d 890, 905–06 (Minn. Ct. App. 2016); see MINN. STAT. § 609.352 subdiv. 2(a), subdiv. 3 (2019).

<sup>131</sup> *Moser*, 884 N.W.2d at 903–04.

<sup>132</sup> *Id.*

<sup>133</sup> *Id.* at 904.

<sup>134</sup> Michael T. Cahill, *Attempt by Omission*, 94 IOWA L. REV. 1207, 1215 (2009).

<sup>135</sup> *Id.*

<sup>136</sup> *State v. Muccio*, 890 N.W.2d 914, 924 (Minn. 2017).

this situation would ignore the issue of how violated a child could potentially feel by their avatar being touched in virtual reality.

Lastly, even the most promising applicable statutes, Minnesota Statutes sections 609.352 subdivision 2(a), 609.3451 subdivision 1(2), and 617.23 subdivision 1(1), do not allow adequate punishments for offenders of sexual conduct in virtual worlds. Minnesota Statute section 609.352 does not require violators to register as a sex offenders.<sup>137</sup> Furthermore, convictions under Minnesota Statute sections 609.3451 subdivision 1(2) and 617.23 subdivision 1(1) are only gross misdemeanors for first-time offenders.<sup>138</sup> Minnesota sentencing guidelines generally allow for a maximum of one year in jail for gross misdemeanors while a felony charge can carry prison time of anywhere from a year to life in prison.<sup>139</sup> Sentencing guidelines matter because they can act as a balancing test between rehabilitation of the offender and strict accountability for punishment.<sup>140</sup> Additionally, these statutes do not address a scenario where a minor is using an adult avatar to shield his or her true identity.

In conclusion, the above-discussed Minnesota statutes hold the most promise for protecting children by punishing offenders in virtual realities; however, they will not suffice to adequately punish offenders. First, the statutes do not address working definitions of important concepts, such as contact with and without haptic technology.<sup>141</sup> Second, the statutes do not address the lack of physical cues regarding a user's true age available to other users in virtual reality, nor do they address concerns regarding the user's real identity. This means an offender cannot be prosecuted under some of the previously mentioned statutes.<sup>142</sup> Lastly, the existing statutes are, for the most part, punishing conduct. Virtual reality is likely to be seen as a form of speech that implicates First Amendment concerns when drafting legislation.<sup>143</sup> Thus, a specific virtual reality statute must define which interactions among users are conduct and which interactions are speech.

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<sup>137</sup> See generally *State v. Ulrich*, 829 N.W.2d 429 (Minn. Ct. App. 2013) (holding the plain language of Minnesota Statute section 243.166, subdivision 1b(a)(2) does not show that all offenses in violation of Minnesota Statute section 609.352, subdivision 2(a) require registration as a predatory offender).

<sup>138</sup> MINN. STAT. § 609.3451 subdiv. 2 (2019).

<sup>139</sup> *Levels of Offenses*, MINNESOTA LEGISLATURE, HOUSE RESEARCH DEPARTMENT, <https://www.house.leg.state.mn.us/hrd/issinfo/cr-offn.aspx?src=4> [https://perma.cc/DU62-6RHX].

<sup>140</sup> Kennedy, *supra* note 117, at 852.

<sup>141</sup> See generally *supra* Part I and Part II, Section B.

<sup>142</sup> See generally *infra* Part VI; see Ducheneaut, *supra* note 12, at 1153 (describing how younger users are likely to create avatars similar to their actual age while older users tend to create younger avatars).

<sup>143</sup> See generally *infra* Part IV.

#### IV. FIRST AMENDMENT BARRIERS

Virtual reality content will lead to debates about First Amendment rights, specifically surrounding freedom of speech.<sup>144</sup> These concerns will arise even when discussing the regulation of children's access to immersive virtual realities because the Supreme Court has held that First Amendment protections apply to children.<sup>145</sup> This section discusses these concerns by illustrating the constitutional implications of various types of restrictions on children to different immersive virtual environments. It will be shown that, although the restrictions will protect certain children from harm, it will leave other children vulnerable. Thus, a criminal statute is needed to provide complete protection to children who are sexually exploited by adults in immersive virtual realities that side-step the lesser restrictive alternative measures.

##### *A. Speech, Conduct, or Both*

A preliminary concern is whether interactions within immersive virtual environments should be categorized as pure speech, pure conduct, or a mixture of both. This categorization is pertinent because it determines the level of scrutiny the Judicial Branch will use to analyze the constitutionality of any government regulation.<sup>146</sup> Today, the leading field for comparison of immersive virtual realities are video game laws.<sup>147</sup> In *Brown v. Entertainment Merchants Ass'n*, the United States Supreme Court held that children's First Amendment Speech rights apply to access of violent video games.<sup>148</sup> The court reasoned:

[l]ike the protected books, plays, and movies that preceded them, video games communicate ideas—and even social messages—through many familiar literary devices (such as characters, dialogue, plot, and music) and through features distinctive to the medium (such as the player's interaction with the virtual world). That suffices to confer First Amendment Protection. . . . And whatever the challenges of applying the Constitution to ever-advancing technology, “the basic principles of freedom of speech

<sup>144</sup> See Bagheri, *supra* note 4, at 108.

<sup>145</sup> *Brown v. Entm't Merchs. Ass'n*, 564 U.S. 786, 837 (2011) (Breyer J., dissenting) (quoting *Erznoznik v. Jacksonville*, 422 U.S. 205, 212 (1955)).

<sup>146</sup> VICTORIA L. KILLION, CONG. RESEARCH SERV., IF11072, THE FIRST AMENDMENT: CATEGORIES OF SPEECH 1 (2019), <https://fas.org/sgp/crs/misc/IF11072.pdf> [<https://perma.cc/7P6B-RTE6>] (“Whether the Court applies strict scrutiny or a lower form of scrutiny, however, depends on the character and context of the speech.”).

<sup>147</sup> See Bagheri, *supra* note 4, at 116.

<sup>148</sup> *Brown*, 564 U.S. at 790.

and the press, like the First Amendment's command, do not vary" when a new and different medium for communication appears.<sup>149</sup>

The majority's reasoning in *Brown* is concerning because it seems to continually extend the categorization of expression—and thus freedom of speech protections—from one medium to the next with little regard for the precedent it will set for similar technology. It is easy to see how the Court could make the connection to video games since immersive virtual reality technology originated from video games.<sup>150</sup> Additionally, immersive virtual realities serve a similar expressive purpose as video games do.<sup>151</sup> Furthermore, avatars could be analogized to characters in books and some of the virtual realities even have plots.<sup>152</sup> As a result, immersive virtual reality environments' evolution from video games, along with virtual reality's expressive nature, makes it highly probable that courts will conclude these virtual realities are a form of speech. However, the extension of the *Brown* holding to immersive virtual realities would be problematic because, as a consequence, any governmental regulations on these immersive virtual worlds would need to survive strict scrutiny.<sup>153</sup> Although it is important to

<sup>149</sup> *Id.*

<sup>150</sup> See generally Brenner, *supra* note 29, at 20–32 (discussing the technological historical development of virtual worlds).

<sup>151</sup> See, e.g., The Oculus Team, *Introducing Expressive Avatars and New Avatar Editor*, OCVLUS VR (Apr. 3, 2019), <https://www.oculus.com/blog/introducing-expressive-avatars-and-new-avatar-editor/> [<https://perma.cc/FH9N-UEAL>] (describing the expressive nature of avatars in virtual reality); Drexel University, *Is Virtual Reality the Next Big Thing in Art Therapy?*, SCIENCE DAILY (Nov. 12, 2019), <https://www.sciencedaily.com/releases/2019/11/191112130407.htm> [<https://perma.cc/2PPP-VUQH>] (discussing the use of virtual reality in art therapy and creative self-expression); Lisa Richwine, *Disney Goes High-tech to Draw Fans to a New 'Lion King'*, REUTERS (July 15, 2019), <https://www.reuters.com/article/us-film-lion-king-remake/disney-goes-high-tech-to-draw-fans-to-a-new-lion-king-idUSKCN1UA24M> [<https://perma.cc/T3FC-CLZ7>] (describing how virtual reality was used in the new Lion King movie to provide expressive animal looks).

<sup>152</sup> Peter Rubin, *Facebook Can Make VR Avatars Look—and Move—Exactly Like You*, WIRED (Mar. 13, 2019), <https://www.wired.com/story/facebook-oculus-codec-avatars-vr/> [<https://perma.cc/baw4-l5r6>] (stating how avatars are “computer-generated characters that represent us”); Johanna Roettl & Ralf Terlutter, *The Same Video Game in 2D, 3D or Virtual Reality – How Does Technology Impact Game Evaluation and Brand Placements?*, PLOS ONE 2 (2018).

<sup>153</sup> See *Brown*, 564 U.S. at 786–87 (describing how “a restriction on the content of protected speech” must survive strict scrutiny meaning “it is justified by a compelling government interest and is narrowly drawn to serve that interest”); see also Karen M. Berberich, *Strict in Theory, Not Fatal in Fact: An Analysis of Federal Affirmative Action Programs in The Wake of Adarand V. Peña*, 11 ST. JOHN'S J.L. COMM. 101, 135 (1995) (stating “strict scrutiny is the highest level of review”).

keep in mind that the level of scrutiny can also change depending on the content of the specific virtual reality.<sup>154</sup>

However, the nature of immersive virtual environments makes them substantially more interactive than video games. In *Brown*, Justice Breyer acknowledged in his dissent that “video games combine physical action with expression.”<sup>155</sup> Thus, Justice Breyer recognized that conduct is involved in video games. Breyer went on to claim that if physical activity predominated a video game, the situation would be different.<sup>156</sup> In that situation, the government could intervene with children’s ability to access them because it would be seen as a restriction that revolved around conduct more than speech.<sup>157</sup> Immersive virtual realities require more physical involvement than two-dimensional, non-immersive video games because the user in the virtual environment wears specific goggles that “shield the individual from the real physical surroundings during the [virtual reality] experience.”<sup>158</sup> Additionally, the user in an immersive virtual reality becomes the avatar while a video game user controls an avatar on the screen.<sup>159</sup> Therefore, the effects of the immersive virtual environment on users, due to the illusion of embodiment,<sup>160</sup> result in users responding to actions in the virtual reality similar to how they would respond in the real-world.<sup>161</sup> The illusion of embodiment is unique to virtual realities and does not occur in video games.<sup>162</sup> In summation, the illusion of embodiment, the use of headsets, and the level of interactivity mean the user has more of a presence in virtual reality video games than in three-dimensional and two-dimensional video games.<sup>163</sup> Thus, while these immersive virtual realities may mimic video games in some ways, they are substantially more conduct-based.

<sup>154</sup> See *infra* Part IV, Sections C–D (showing how the levels of scrutiny can vary depending on the content of the expressive material).

<sup>155</sup> *Brown*, 564 U.S. at 847 (Breyer, J., dissenting).

<sup>156</sup> *Id.*

<sup>157</sup> *Id.*

<sup>158</sup> Roettl, *supra* note 151, at 2 (comparing immersive virtual realities to augmented reality where the user’s glasses shield them from the outside world in virtual reality but not in augmented reality).

<sup>159</sup> Lemley, *supra* note 11, at 1059.

<sup>160</sup> See *generally supra* Part II, Section B.

<sup>161</sup> See *generally supra* Part II, Section B.

<sup>162</sup> Daniel Perez-Marcos, *Virtual Reality Experiences, Embodiment, Videogames and Their Dimensions in Neurorehabilitation*, 15 J. NEUROENGINEERING & REHABILITATION 1, 5 (2018) (stating how video games usually lack embodiment); see also Lemley, *supra* note 11, at 1065 (discussing the Milgram experiment where users responded differently to virtual environments than they did to two-dimensional screens).

<sup>163</sup> Roettl, *supra* note 151, at 4 (stating how the user has more of a physical presence in the virtual reality than in three-dimensional and two-dimensional video games).

Since these immersive virtual realities require more physical involvement and interactivity, it would be more accurate to categorize these environments as a mixture of speech and conduct as opposed to solely speech. In *United States v. O'Brien*, the defendant's action of destroying his draft card was categorized by the Court as conduct because it involved the physical action of destruction.<sup>164</sup> However, the defendant attempted to argue his conduct also involved an expressive element, or symbolic speech, due to the defendant's purpose of trying to influence others to take on his anti-war beliefs.<sup>165</sup> The Court rejected this logic and refused to conclude that all conduct intended to express an idea was protected under free speech.<sup>166</sup> As shown above, virtual reality does have expressive elements. Arguably, the nature of virtual realities is far more expressive than the symbolic message of burning a draft card. Thus, courts should categorize the interactions in immersive virtual environments as a mixture of conduct and expressive speech.

Categorizing immersive virtual realities as a mixture of speech and conduct will result in a less restrictive level of constitutional scrutiny of government regulations aimed at protecting children, which means it will be easier to shield children from harm. In *O'Brien*, the court determined the test for an intermediate level of scrutiny:

[w]hen "speech" and "nonspeech" elements are combined in the same course of conduct, a sufficiently important governmental interest in regulating the nonspeech element can justify incidental limitations on First Amendment freedoms. . . . [A] government regulation is sufficiently justified if it is within the constitutional power of the Government; if it furthers an important or substantial governmental interest; if the governmental interest is unrelated to the suppression of free expression; and if the incidental restriction on alleged First Amendment freedoms is no greater than is essential to the furtherance of that interest.<sup>167</sup>

Comparably, a compelling state interest requires the State to identify an "actual problem" that needs solving.<sup>168</sup> Additionally, the restriction of free

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<sup>164</sup> *United States v. O'Brien*, 391 U.S. 367, 375 (1968) (discussing the conduct language of the regulation which criminalizes a person whom "forges, alters, or in any manner changes but also one who knowingly destroys, [or] knowingly mutilates a certificate").

<sup>165</sup> *Id.* at 376.

<sup>166</sup> *Id.*

<sup>167</sup> *Id.* at 376-77.

<sup>168</sup> *Brown*, 564 U.S. at 799.

speech must be necessary to the solution.<sup>169</sup> This standard is much more demanding than the intermediate scrutiny test.<sup>170</sup>

As haptic technology becomes more mainstream it will blur the line between speech and conduct even more. Hopefully, this will make it easier for courts to categorize virtual environments as more conduct-based than expressive speech. Haptic technology will involve the user's physical sensation of touch, taking the interactivity of virtual environments to an even more immersive level.<sup>171</sup> This increase in user's physical involvement will imaginably make it easier for a court to conclude virtual realities involve conduct. However, since haptic technology is not yet mainstream,<sup>172</sup> courts are currently unlikely to consider it.

Lastly, decisions on whether virtual realities are speech-based, conduct-based, or both should be left to the legislatures. In Justice Alito's *Brown* concurrence, he warned that deferring to the Legislative Branch may be necessary when dealing with constitutional principles and new technology:

In considering the application of unchanging constitutional principles to new and rapidly evolving technology, this Court should proceed with caution. We should make every effort to understand the new technology. We should take into account the possibility that developing technology may have important societal implications that will become apparent only with time. We should not jump to the conclusion that new technology is fundamentally the same as some older thing with which we are familiar. And we should not hastily dismiss the judgment of legislators, who may be in a better position than we are to assess the implications of new technology.<sup>173</sup>

Nevertheless, since immersive virtual realities evolved from video games, it is probable that as these issues first emerge courts will follow precedent set in *Brown* and incorrectly categorize these interactions as solely expressive speech as opposed to conduct.<sup>174</sup> Thus, any governmental regulations would need to survive strict scrutiny rather than the intermediate level of scrutiny applied in *O'Brien*. Thus, the next portions, which address different hypothetical statutes, will analyze them under strict scrutiny because it is the highest standard of constitutional scrutiny and, as argued above, courts will probably incorrectly apply this level of scrutiny at first.

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<sup>169</sup> *Id.*

<sup>170</sup> *Id.*

<sup>171</sup> See generally *supra* Part II, Section B.

<sup>172</sup> See generally *supra* Part II, Section B.

<sup>173</sup> *Brown*, 564 U.S. at 806 (Alito, J., concurring).

<sup>174</sup> See *id.* (noting First Amendment protections apply to video games).



*B. Complete Ban of All Virtual Environments for Adults and Children*

The portion of the constitutional analysis for free speech regulations likely to be most problematic for virtual realities is whether the restriction is narrowly tailored. When the government attempts to regulate expressive conduct, “the restriction must be justified by a compelling state interest and must be narrowly tailored to achieve that interest.”<sup>175</sup> The United States Supreme Court has recognized the government has a compelling interest in protecting the psychological and physical well-being of minors.<sup>176</sup> Moreover, the Minnesota Supreme Court has acknowledged the State’s interest in specifically protecting children from sexual exploitation.<sup>177</sup> Thus, any statute implemented to serve these essential interests is highly likely to satisfy this portion of the analysis. It is the second prong—whether the restriction is narrowly tailored—that will prove most problematic. However, the analysis will obviously vary depending on the language of the specific statute.

The government’s complete ban of all immersive virtual realities will be seen as overly broad content regulation since this would limit adults’ access as well as children’s access. In *Butler v. Michigan*, the “unanimous [Supreme] Court reversed a conviction under a statute which made it an offense to make available to the general public materials found to have a potentially harmful influence on minors.”<sup>178</sup> The Court determined that the law was insufficiently tailored since it denied adults their free speech rights by allowing them to read only what was acceptable for minors.<sup>179</sup> A statute prohibiting immersive virtual realities in their entirety would be analogous to the statute in *Butler* because while it would serve the interest of protecting children, it would deny adults their free speech rights.<sup>180</sup> Thus, such a statute would likely fail under strict scrutiny’s second prong because it would not be narrowly tailored. Hence, this statute would be unsuccessful in protecting children from sexual exploitation in immersive virtual reality environments.

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<sup>175</sup> W. Bradley Wendel, *Free Speech for Lawyers*, 28 HASTINGS CONST. L.Q. 305, 364 (2019).

<sup>176</sup> See *Sable Commc’ns of Cal. v. FCC*, 492 U.S. 115, 126 (1989).

<sup>177</sup> See *State v. Moser*, 884 N.W.2d 890, 903-04 (Minn. 2016).

<sup>178</sup> *Sable Commc’ns*, 492 U.S. at 126-27 (1989) (citing *Butler v. Michigan*, 352 U.S. 380 (1957)).

<sup>179</sup> *Id.*

<sup>180</sup> For example, pornographic materials may be deemed harmful to children, but banning the production of all pornographic materials would result in adults losing access to such materials solely because they are deemed harmful for children. This would result in infringement of adults’ free speech rights of viewing these pornographic materials.

### *C. Complete Prohibition of Children in All Virtual Realities*

Banning children from all immersive virtual realities will be seen as overly broad because it excludes children from both the content they have the right to see and the content they do not have the right to access. This rationale goes back to the holding in *Brown*. The United States Supreme Court held a statute which restricted children's right to access adult-rated violent video games was unconstitutional because it violated children's First Amendment rights.<sup>181</sup> Thus, a statute banning children from all virtual realities would be void as overbroad.

### *D. Banning Children from Sex-Based Virtual Environments*

Prohibiting children from immersive virtual environments, where the main objective is for the users to have sexual interactions, will likely be constitutional because the material will be considered obscene. As discussed above, the government does not have the power to restrict expression or speech because of its subject matter, message, ideas, or content.<sup>182</sup> However, the United States Supreme Court has held that the protection of First Amendment freedom of speech does not extend to obscene speech.<sup>183</sup> In *Miller v. California*, the Court defined obscene sexual material in terms of

(a) whether the average person, applying contemporary community standards would find that the work, taken as a whole, appeals to the prurient interest . . . ; (b) whether the work *depicts or describes, in a patently offensive way*, sexual conduct specifically defined by the applicable state law; and (c) whether the work, taken as a whole, lacks serious literary, artistic, political, or scientific value.<sup>184</sup>

In *Ginsburg v. New York*, the Court further refined this test for minors. The test became whether the material (1) predominantly appeals to the prurient, shameful or morbid interests of the minors; (2) is patently offensive to prevailing standards in the adult community as a whole with respect to suitable material for minors; and (3) is without social importance for minors.<sup>185</sup> Thus, immersive virtual realities where sex is the main objective may be classified as obscene for children, making statutory

<sup>181</sup> *Brown v. Entm't. Merchs. Ass'n*, 564 U.S. 786, 794-95 (2011).

<sup>182</sup> *Id.* at 790-91.

<sup>183</sup> *Sable Commc'ns of Cal.*, 492 U.S. at 124.

<sup>184</sup> *Denver Area Educ. Telecomms. Consortium v. FCC*, 518 U.S. 727, 751 (1996) (quoting *Miller v. California*, 413 U.S. 15, 24 (1973)).

<sup>185</sup> *Ginsburg v. New York*, 390 U.S. 629, 633 (1968).

restrictions banning children from these environments less likely to raise First Amendment concerns.

The Court held in *Ginsburg* the concept of obscenity or of unprotected matter may vary according to the group to whom the questionable material is directed or from whom it is quarantined.<sup>186</sup> The Court determined a New York Criminal Statute prohibiting the sale of obscene materials to minors seventeen years of age and younger—defining the obscenity of the material on the basis of its appeal to minors of this age—had a rational relation to the objective of safeguarding such minors from harm.<sup>187</sup> This interest is extended to shield minors from the influence of literature which is not obscene by adult standards.<sup>188</sup> The government can serve the legitimate interest of protecting children but can only withstand constitutional scrutiny if the regulation is narrowly tailored.<sup>189</sup> Thus, since the hypothetical statute discussed above is narrowly directed only towards children in a virtual reality setting where the main objective is to facilitate sexual encounters, which would be classified as obscene material, it is likely the hypothetical statute would be constitutional. However, it would be naïve to leave the issue here because sexual predators will seek out child victims in an online setting where they know children will be.<sup>190</sup> Thus, a statute would need to be implemented to protect children in both structured virtual realities, where non-sexual interactions are the main objective, and in unstructured virtual realities, where sex is an option but not the sole objective.

#### *E. Banning Children From Indecent Virtual Environments*

Next, this article examines whether a hypothetical statute restricting a child's access to virtual realities where the main objective is not sex would be deemed unconstitutional. A virtual reality where the main objective is not sex is unlikely to be categorized as obscene material due to the lack of sexual content.<sup>191</sup> Rather, this material would likely be deemed indecent. "Sexual expression which is indecent but not obscene is protected by the First Amendment."<sup>192</sup> The Federal Communications Commission defines

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<sup>186</sup> *Id.* at 636.

<sup>187</sup> *Id.* at 643.

<sup>188</sup> *Sable Commc'ns of Cal.*, 492 U.S. at 126; *see also Ginsberg*, 390 U.S. at 634.

<sup>189</sup> *Sable Commc'ns of Cal.*, 492 U.S. at 126.

<sup>190</sup> *See Wilson*, *supra* note 3, at 1140 (stating "one in seven children report being solicited for sex online").

<sup>191</sup> *See generally Ginsberg v. New York*, 390 U.S. 629 (1968) (discussing the sexual nature of the magazines at issue).

<sup>192</sup> *Sable Commc'n of Cal.*, 492 U.S. at 126.

indecent speech as material that “depicts or describes sexual or excretory organs or activities in terms patently offensive as measured by contemporary community standards for the broadcast medium.”<sup>193</sup> Thus, most virtual environments will likely be categorized as indecent because there are aspects with adult-like characteristics, such as provocative clothing or vulgar language that would be “patently offensive” to children.<sup>194</sup> For instance, *Second Life* allows vulgar language and provocative clothing, but the structured virtual reality’s purpose is not sex-based content.<sup>195</sup> Following *Brown*, a State may not enact any legislation which restricts a gaming company’s ability to direct violent and sexually explicit speech toward minors unless it survives strict scrutiny because such materials, which often depict grotesque, obscene, and sexually explicit material, constitute art or literature.<sup>196</sup> Thus, virtual realities that contain expressive purposes coupled with portions of sexually explicit material, such as *Second Life*, may receive an expansion of the *Brown* holding allowing children to access these environments. Thus, a statute banning children’s access to virtual environments where children will be exposed to some indecent material may not be upheld as constitutional.

Another potential avenue is to have a statute limiting the times children can access indecent immersive virtual worlds. However, such protections would fail for two reasons. First, virtual reality will be seen as a non-pervasive mode of communication, and second, practical challenges will prove detrimental to any such statute. When analyzing the constitutionality of statutes which prohibit indecent material, the mode of speech tends to matter when courts are analyzing the constitutionality of statutes. In *Pacifica*, the Supreme Court determined it was constitutional for the Federal Communications Commission to regulate a radio broadcast of material which was indecent by limiting the channel to only broadcasting the material during times of day when children would likely not be exposed.<sup>197</sup> The Court’s narrow holding hinged on the fact that it was not a total ban of

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<sup>193</sup> *Obscenity, Indecency, Profanity*, FED. COMMS. COMMISSION, <https://www.fcc.gov/general/obscenity-indecency-and-profanity> [https://perma.cc/K7MH-PJ68].

<sup>194</sup> See *Indecent Speech*, BOUVIER LAW DICTIONARY (“[I]ndecent language is distinguished from obscene language in that (1) it lacks the element of appeal to the prurient interest . . . and that (2) when children may be in the audience, it cannot be redeemed by a claim that it has literary, artistic, political or scientific value.”).

<sup>195</sup> See generally *supra* Part II, Section A.

<sup>196</sup> Christine Walton, *Brown v. Entertainment Merchants Association: No Longer Silencing the “Silent Epidemic of Desensitization”*, 33 WHITTIER L. REV. 453, 473 (2012).

<sup>197</sup> See *FCC v. Pacifica Found.*, 438 U.S. 726, 750 (1978).

material.<sup>198</sup> Additionally, the Court's decision relied on the "unique pervasive" characteristic of broadcasting, meaning it could intrude on the privacy of the home without prior warning as to program content and was uniquely accessible to minors.<sup>199</sup>

It is unlikely a court would find virtual realities to be analogous to a broadcasting company in the characteristic of unique pervasiveness because the software and the headset have to be purchased and children have to place the headset on their head in order to be exposed to the material of the virtual world. Contrarily, one could argue a radio set needs to be purchased and turned on, diminishing the distinction between the medium in *Pacifica* and virtual realities. However, it is likely a court would deem virtual realities to be non-pervasive in comparison to radio sets because parents can, for the most part, control which virtual environments their children access while a parent has no control over the material broadcasted on a radio station.<sup>200</sup> Additionally, unlike broadcasting stations which only reach a limited area, virtual realities are conducted on the internet. This makes such a restriction practically challenging. For example, if the restriction is from three to nine in the afternoon (after school hours), this will not be nationally applicable because children on the east coast will not be protected during the same hours as children on the west coast. Therefore a statute restricting the times children can access virtual environments where content is classified as indecent is unlikely to be constitutional and will almost certainly be impracticable.

Limiting children's access to these virtual worlds is clearly challenging. Even if our justice system could restrict access to some virtual realities, children are still vulnerable in other virtual settings where access cannot be constitutionally restricted. Thus, it is important to have criminal statutes in place to punish sexual perpetrators in virtual realities.

#### *F. Perpetrator's Defense: Speech versus Conduct*

When a court analyzes whether a criminal statute violates a defendant's First Amendment speech rights, the court must apply the following test: (1) whether the defendant's action classifies as speech; (2) if yes, whether the speech is protected; (3) if yes, whether the state has a

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<sup>198</sup> See *id.* at 727.

<sup>199</sup> *Id.* at 748.

<sup>200</sup> See *id.* (explaining how prior warnings of offensive content cannot protect the listener from a broadcast's unexpected content due to the way listeners tune in and out and how other forms of offensive expressive material, unlike radio broadcasts, may be withheld from children without restricting the actual expression).

compelling interest; and (4) if yes, whether the restriction achieves the state's compelling interest by using the least restrictive means.<sup>201</sup>

First, as discussed in Part IV, it is highly likely courts will classify interactions in virtual realities as an extension of video games, which have already been categorized as speech, meaning a defendant would receive First Amendment protections.<sup>202</sup> Thus, it is likely this element of a constitutional analysis for an offender's violation of First Amendment Speech Protection would be met.

Second, even if the interactions are interpreted as speech, it is likely any inappropriate sexual interactions between an adult and a child will not be protected speech. In *Muccio*, the court determined the statute which made it a crime to describe sexual conduct to a child over the internet was not overly broad.<sup>203</sup> The court's decision rested on the fact that grooming is criminal conduct resembling the solicitation of a child to perform later sexual acts, which means First Amendment protections are not applicable.<sup>204</sup> It is highly probable a court would see sexual interactions with a child in virtual reality as a form of grooming, similar to that in *Muccio*, so First Amendment protections would not apply. There is the slight possibility a court will come to the opposite conclusion, depending on the actions or words an offender directed toward the specific child or the specific facts of the case, which means this element would be satisfied.<sup>205</sup>

Third, as previously mentioned, the government has a compelling interest in protecting children from sexual exploitation, and this interest will extend to virtual realities. "In order to survive strict scrutiny, a law must be narrowly tailored to serve a significant governmental interest."<sup>206</sup> This article has already discussed the state's interest in protecting a child from sexual exploitation.<sup>207</sup> A statute is narrowly tailored if the alternative measures that burden substantially less speech would be inadequate to achieve the government's interests, "not simply that the chosen route is easier."<sup>208</sup> Despite the fact that the government could implement less restrictive solutions, such alternatives will not provide the adequate protection to

<sup>201</sup> See *Citizens United v. Fed. Election Comm'n*, 558 U.S. 310, 340 (2010); *Ashcroft v. Am. Civil Liberties Union*, 542 U.S. 656, 666 (2004).

<sup>202</sup> See *supra* Part IV, Section A.

<sup>203</sup> See *State v. Muccio*, 890 N.W.2d 914, 920 (Minn. 2017).

<sup>204</sup> See *id.* at 925.

<sup>205</sup> This article continues this analysis to demonstrate that any alternative restrictions will not adequately protect children.

<sup>206</sup> *Packingham v. North Carolina*, 137 S. Ct. 1730, 1736 (2017) (internal quotations omitted).

<sup>207</sup> See *supra* Part IV, Section A.

<sup>208</sup> *McCullen v. Coakley*, 573 U.S. 464, 495 (2014).

protect children from harm. As such, the State's interest will not be served by them.

One alternative measure some virtual reality creators have already implemented is requiring users to enter a birth date before gaining access to the virtual world, however, a child's ability to side-step this hurdle means this protection will be insufficient. In *Second Life*, residents have to be eighteen years old to participate in the virtual reality.<sup>209</sup> However, this restriction is only monitored by the user entering a date of birth, so any child that can do simple math would be able to enter a "correct" birth date in order to get access to an adults-only virtual reality.<sup>210</sup>

The most promising alternative measure is the requirement of a credit card to access the virtual environments. However, even this will not adequately protect children from sexual harm in virtual environments. Already, some virtual realities require credit cards to obtain access.<sup>211</sup> Theoretically, a child could take an adult's credit card to obtain access without the adult's permission. However, since the credit card is charged, the true owner of the credit card is likely to discover the child had used the card.<sup>212</sup> Moreover, there may be situations where a parent voluntarily enters their credit card information or gives a child their own credit card for in-game purchases.<sup>213</sup> The parent may deem this action to be harmless because the parent may not understand the credit card is a protective measure or, if the parent does see it as a protective measure, the parent may naively perceive the content of the immersive virtual reality to be harmless, not understanding predators could still seek child victims out in these environments. However, not all virtual reality environments require credit cards to gain access, which makes it easier for children to access these environments without parental oversight.<sup>214</sup> Nonetheless, once these children gain access to these virtual realities, they are still not protected from being sexually groped or exploited.

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<sup>209</sup> Brenner, *supra* note 29, at 34. Teenagers between the ages of thirteen and eighteen can participate in *Teen Second Life*.

<sup>210</sup> Wilson, *supra* note 3, at 1136 ("Segmenting players by age would seem sufficient to shield children from virtual sex if age restrictions worked. But they do not. Any kid who can do basic math can easily enter.").

<sup>211</sup> *Id.*

<sup>212</sup> *Id.* at 1137.

<sup>213</sup> See Courtney Schoenemann, *More Parents are Giving Their Kids Their Own Credit Cards*, CBS AUSTIN (Oct. 14, 2019), <https://cbsaustin.com/news/local/more-parents-are-giving-kids-their-own-credit-card> [<https://perma.cc/V24V-FKYT>] (describing how at least six million parents in the U.S. have at least one child with a credit card).

<sup>214</sup> Wilson, *supra* note 3, at 1136 (explaining how all that is needed to enter *Second Life* is a birthdate which shows the user is over eighteen).

Another alternative solution is to use coding. However, coding alone cannot control virtual conduct.<sup>215</sup> Because virtual realities are essentially a computer program, coding serves as a regulatory tool for the designers of the virtual realities.<sup>216</sup> For instance, coding can filter out profanity in a virtual world.<sup>217</sup> *QuiVr* proposed the idea of coding a “Personal Bubble,” so other player's hands disappear if they come close to another user's face.<sup>218</sup> After Jordan Belamire's assault in *QuiVr*'s virtual reality, the creator of the virtual reality extended the personal bubble feature to the rest of the avatar's body.<sup>219</sup> That way, if the setting was turned on, other players would fade away when they reached an avatar's personal bubble.<sup>220</sup> Arguably, this would be a successful alternative measure to protect children, though it requires the setting to be turned on in the virtual reality game.<sup>221</sup> In addition, in order to eliminate the chance that any such “personal bubble” could take away from the integrity of the game,<sup>222</sup> this could be a feature that a parent could turn on only when children are playing. Unfortunately, due to griefing, this less restrictive alternative would not be a suitable measure to protect children from inappropriate sexual interactions with adults.

Griefing play is where a user's conscious objective is to disrupt and ruin the play of other users.<sup>223</sup>

Griefing is a fact of virtual life in all VWs, but unstructured VWs like Second Life are most vulnerable and present a new frontier in troublemaking potential. In these VWs, the line between virtual and reality is most permeable, and griefing has the most potential to inflict a harm that transcends play. Griefing often amounts to defacing attacks on a player's in-game property. Grievers may delete items or information from a player's virtual space or an avatar's inventory. Alternately, grievers may exploit the

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<sup>215</sup> Levine, *supra* note 12, at 935. Coding is software programming. Fred Aebli, *What Is Software Coding: A Simple and Clear Explanation*, GETMECODING, <https://www.getmecoding.com/software-coding/> [https://perma.cc/QT9X-SC4G]. “Computer programming is a way of giving computers instructions about what they should do next. These instructions are known as code, and computer programmers write code to solve problems or perform a task.”

Karen McCandles, *What is Computer Programming?* CODECADEMY, (June 13, 2018), <https://news.codecademy.com/what-is-computer-programming/> [https://perma.cc/M3HS-5KFB].

<sup>216</sup> See Levine, *supra* note 12, at 935.

<sup>217</sup> See *id.*

<sup>218</sup> Lemley, *supra* note 11, at 1084.

<sup>219</sup> *Id.* at 1084–85.

<sup>220</sup> *Id.* at 1085.

<sup>221</sup> *Id.*

<sup>222</sup> See *infra* Part V, Section C.

<sup>223</sup> Levine, *supra* note 12, at 937.



open coding of certain VWs and add code rather than delete it. In one notable example, griefers added digital fecal matter and racially charged imagery to former presidential candidate John Edward's Second Life campaign headquarters.<sup>224</sup>

In conclusion, certain virtual realities require more open coding than others, which means a child playing a game with less restrictive codes is more likely to be sexually preyed on by an adult. Even in games where there are codes, skilled users can manipulate these codes, making children vulnerable to sexually inappropriate behavior.

Beyond coding, game designers regulate virtual worlds through rules and contractual agreements,<sup>225</sup> but these are not protective alternatives for children. The rules for some virtual realities are presented as end user license agreements (EULA) or term of service agreements (TOS).<sup>226</sup> Players must agree to these rules and regulations before accessing that specific virtual reality environment for the first time.<sup>227</sup> This is usually done through clicking an "I agree" box before they begin to play.<sup>228</sup> These "click-wrap" contracts have proven controversial, and perhaps unenforceable, in other contexts.<sup>229</sup> "For example, the proscriptive rules of *Second Life* are formalized in the Community Standards, which articulate the 'Big Six' behaviors that result in a suspension or ban."<sup>230</sup> The Big Six behaviors include "intolerance, harassment, assault, disclosure, indecency, and disturbing the peace."<sup>231</sup> If a user violates any of these behaviors, the designer of the virtual reality can prohibit the user from the game, either permanently or temporarily.<sup>232</sup>

Unfortunately, virtual realities are poorly supervised.<sup>233</sup> This means users who engage in misconduct in virtual worlds do not always suffer consequences, which could result in inadequate protection for children. "To facilitate the supervisory process, some game administrators provide reporting mechanisms for violations of the rules of play. However, even when a wrongdoer comes to the attention of the authorities, the player is generally only banned if the intent to disrupt is explicitly demonstrated."<sup>234</sup>

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<sup>224</sup> *Id.* at 939.

<sup>225</sup> *Id.* at 936.

<sup>226</sup> *Id.*

<sup>227</sup> *Id.*

<sup>228</sup> *Id.*

<sup>229</sup> *Id.*

<sup>230</sup> *Id.* at 944.

<sup>231</sup> *Id.*

<sup>232</sup> *Id.* at 945.

<sup>233</sup> *See id.*

<sup>234</sup> *Id.*

Furthermore, banning a player may be largely ineffective, as a user can create a new account in a matter of minutes, and there is no way to trace if a person has already been banned from the game.<sup>235</sup> “A single griefer may use and discard hundreds, perhaps thousands, of accounts.”<sup>236</sup> This is especially true for games such as *Second Life* where user accounts are free and, thus, largely disposable.<sup>237</sup>

The creators that require a person to enter a credit card, though, might have created a decent barrier to the problem of a user creating new accounts.

If a VR environment requires people to provide a credit card, or otherwise supply a deposit, such new user IDs might become harder to create, and the environment might even threaten fines or forfeited deposits for bad behavior. How often this will happen will depend on economic factors that we can't easily predict. We expect that many VR environments will want to allow free access, or at least access that doesn't require a credit card (but might require only some prepaid gift card), since the VR operators will want to harness network effects by increasing their user bases. Presumably, those operators will make money from in-VR purchases rather than through credit card subscriptions.<sup>238</sup>

However, as the quote above demonstrates, increasing the user bases is important to virtual realities' creators. As such, it is unlikely creators will want to require a credit card to gain access to their virtual reality platforms. Furthermore, the temporary or permanent banning of griefers does not itself provide adequate protection, as it is a consequence that comes after harm has already been caused.<sup>239</sup> Though the same is true of a criminal conviction, that assertion ignores any general deterrence criminal statutes may have.

In summation, an offender's defense that a criminal statute impedes on his or her First Amendment rights to free speech will likely fail because (1) there is a compelling State interest to protect children from sexual exploitation; (2) courts have held that First Amendment protections do not extend to speech which is involved with the commission of the crime; and (3) any alternative measures shall be deemed inadequate to protect

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<sup>235</sup> See *id.* at 945-46.

<sup>236</sup> *Id.* at 946.

<sup>237</sup> See *id.* at 945.

<sup>238</sup> Lemley, *supra* note 11, at 1074-75.

<sup>239</sup> See Levine, *supra* note 12, at 946 (“Bans neither remedy the in-world injury caused by griefing nor the spill over injury to the real life of the victim. If legal remedies are available to the victims of a griefing attack, the real-world injury should dictate the choice of remedies.”).

children.<sup>240</sup> Thus, as long as the Legislature carefully drafts the statute, an offender should be unsuccessful in raising a First Amendment defense.

## V. PROCEDURAL AND PRACTICAL CHALLENGES TO PROPOSED SOLUTIONS

This portion of the article raises some of the procedural and practical concerns for the Legislative Branch to consider when drafting a criminal statute to apply in virtual reality. Although this article attempts to propose a solution to these challenges, it is not arguing that these are the best or the only solutions. Rather, this article acknowledges there are solutions and these practical challenges should not be a barrier to implementing criminal statutes.

### *A. Jurisdictional Issues*

One issue when applying any sort of criminal statute to a virtual reality is jurisdiction. Specifically, how can a law effectively regulate environments that can be accessed by users around the country and the world via the internet?<sup>241</sup> For example, an indecent assault may be initiated by someone accessing the environment in the United States while the victim is accessing the environment from New Zealand.<sup>242</sup> It is unlikely the law will

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<sup>240</sup> See *supra* Part IV, Section B.

<sup>241</sup> Hansen, *supra* note 9, at 72.

Alongside issues of jurisdiction are issues of enforcement. These challenges can only be approached if a strong relationship between virtual reality developers and lawmaking authorities exists. This will allow for a constructive dialogue on the liability of virtual reality developers and help to establish effective regulations on the technology. Enforcement issues will require regulation of platform developers to ensure there are appropriate safeguards built into virtual environments. For example, identifying the actor in any assault would prove difficult without a built-in surveillance system. It may be necessary to force developers to secure and survey their virtual environments. This particular problem could be resolved by recording a user's virtual experiences.

*Id.*; see generally Paul Schiff Berman, *Legal Jurisdiction and Virtual Social Life*, 27 CATH. U. J. L. & TECH. 103 (2019) (discussing jurisdictional issues in conflicts arising out of virtual worlds).

<sup>242</sup> Hansen, *supra* note 9, at 72.

Some jurisdictions are open to protecting virtual property. For example, a Dutch teen was arrested for the theft of virtual chattel—and there are comparable instances of criminal prosecution related to VWs in other countries. The few people in United States jurisdictions who have tried to invoke legal protection for virtual property have not found relief. One unfortunate player of Final Fantasy who lost in-game property worth \$4,000 went to the police, only to be told that no crime had been committed because virtual property was not property.

Levine, *supra* note 12, at 959.

be able to enforce any criminal punishment on a foreign user and this raises issues of extradition.<sup>243</sup> A potential solution is to require jurisdictions to work together. For example, New Zealand perpetrators could be convicted of the offense under New Zealand law, deterring other users from committing such virtual acts.<sup>244</sup> Arguably, it will be easier for police departments in the United States to be incentivized to work together to make sure the criminal is punished because international extradition will not be an issue. Thus, jurisdictional challenges will arise as they always have, however, this should not be a defeating barrier to criminalization.<sup>245</sup>

### *B. Quantifying Harm*

If the benefits of virtual reality are real, then the harms must be equally real.<sup>246</sup> Some people may argue harm in virtual reality is not equivalent to harm in the real world. However, that argument can only prevail by focusing solely and narrowly on physical harm. “With virtual offenses, notably virtual sexual offenses, it may be harder to quantify the detrimental harm the victims suffer.”<sup>247</sup> Deciding whether an attack creates an “internal or external injury,” an injury to the user of the avatar, or just to the digital avatar itself is a difficult task.

Consider the example of a griefer who commits “virtual rape” against another player's avatar. The griefer obviously does not physically violate the other player. All that has actually happened, physically, is a series of offensive, disembodied digital exchanges. The in-game injury is negligible. Nonetheless, the rape is objectionable because, from a virtual perspective, the victim has suffered an emotional harm - the victim's avatar and emotional integrity have been attacked.<sup>248</sup>

Furthermore, neuroscientists claim that developments in science “will enable visualization of psychological harms, reducing or eliminating the distinction between bodily harm and psychological damage.”<sup>249</sup> This development could mean the gap between physical and psychological injury might be narrowed, which allows for the overt distinction criminal law has established between the two to diminish.<sup>250</sup> Current sexual offense laws

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<sup>243</sup> See Levine, *supra* note 12, at 959.

<sup>244</sup> See *id.*

<sup>245</sup> See Hansen, *supra* note 9, at 72.

<sup>246</sup> See Franks, *supra* note 65, at 502.

<sup>247</sup> Esparza, *supra* note 85, at 32.

<sup>248</sup> Levine, *supra* note 12, at 946-47.

<sup>249</sup> Jaclyn Seelagy, *Virtual Violence*, 64 UCLA L. REV. DISC. 412, 426 (2016).

<sup>250</sup> See Esparza, *supra* note 85, at 37.

require some form of physical contact, thereby not addressing psychological harm induced by virtual sexual offenses.<sup>251</sup>

The question becomes whether policy considerations in terms of punishing criminal conduct should consider emotional or psychological harm. For instance, one policy justification for child molestation laws is to prevent teen pregnancy, which cannot occur in a virtual environment.<sup>252</sup> However, physical consequences, such as pregnancy, should not be considered with such great weight because emotional trauma of any sexual assault, whether it be a child or adult victim, is long-lasting.<sup>253</sup> Emotional trauma in children effects childhood development so it is absolutely an essential policy consideration.

Arguably, the sexual contact and thus physical harm language could be met once haptic technology becomes more mainstream,<sup>254</sup> however, this would pose other challenges. By wearing a haptic suit, children would be able to feel stimulation on their actual human intimate parts from the adult user's actions in the virtual reality, as opposed to an emotional feeling of being violated. At the point where the child's actual body is being stimulated, the argument that it occurred through an avatar seems moot, which means a court would likely interpret the touch element to be met if haptic technology is involved. However, children will feel violated and potentially suffer severe emotional trauma before this occurs.

In conclusion, it will be vitally important in protecting children developmentally to require that harm in virtual realities is measured by emotional trauma as opposed to physical trauma.

### *C. Protecting the Immersive Virtual Realities' Integrity*

Some of the above discussed solutions are going to impede the freedom that makes these games popular. This is a concern because users and creators are likely to be upset by any legislation that limits users' enjoyment of their platforms. Thus, creation of a criminal statute that punishes the actors who use virtual reality as a tool for sexually abusing children—instead of limiting all virtual reality users—allows the justice system to balance users' interest and the state's interest in protecting children.

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<sup>251</sup> See generally *supra* Part III.

<sup>252</sup> Wilson, *supra* note 3, at 1160.

<sup>253</sup> See Melinda Smith & Jeanne Segal, *Recovering from Rape and Sexual Trauma*, HELPGUIDE, <https://www.helpguide.org/articles/ptsd-trauma/recovering-from-rape-and-sexual-trauma.htm> [https://perma.cc/BUV5-87W7].

VI. PROPOSED STATUTE<sup>255</sup>**SEXUAL MISCONDUCT WITH A CHILD IN VIRTUAL REALITY.****Subdivision 1. Definitions.**

(a) Virtual reality - Virtual reality is any three-dimensional environment where the user is fully-immersed in a computer-generated simulation. Full immersion occurs when the user is wearing a headset and the technology is advanced enough to follow the user's movement in order to trick the user into experiencing embodiment<sup>256</sup> of his or her avatar. It shall be presumed embodiment occurs and shall be rebutted using a subjective standard.

(b) Minor - A minor shall consist of any person under the age of consent in Minnesota in compliance with 609.342, subdivision 1(b).<sup>257</sup>

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<sup>255</sup> See generally Esparza, *supra* note 85, at 38-39 (proposing a similar statute to be applied in virtual reality which is focused on adults as opposed to children). "UNCONSENSUAL VIRTUAL SEXUAL TOUCHING. (a) A person commits the offense of nonconsensual virtual sexual touching if the person via VR interaction:

(a) Intentionally or knowingly, touches the sexual or other intimate parts of an avatar without the consent of the user for the purpose of degrading or abusing the avatar's user; or,

(b) Intentionally or knowingly, touches the sexual or other intimate parts of an avatar without the consent of the user for the purpose of sexual arousal or sexual gratification.

(c) As used in this section, the following terms have the following meanings:

a. "Touching" means contact with another person's avatar.

b. "Sexual parts" and "intimate parts" mean sexual organs, anus, groin, or buttocks of any person, and the breast of a female.

c. "VR" means a computer-generated environment which allows for the interaction of users via headsets, directional treadmills or other like products meant to provoke an illusion of reality.

d. "Avatar" means the virtual representation of a user.

(d) A violation of this law is punishable by imprisonment for no more than [insert], and by a fine not exceeding [insert].

*Id.*

<sup>256</sup> See generally *supra* Part I.

<sup>257</sup> See MINN. STAT. § 609.342, subdiv. 1(b) (2019) ("A person who engages in sexual penetration with another person, or in sexual contact with a person under 13 years of age . . . is guilty of criminal sexual conduct in the first degree if the complainant is at least 13 years of age but less than 16 years of age and the actor is more than 48 months older than the complainant and in a current or recent position of authority over the complainant. Neither mistake as to the complainant's age nor consent to the act by the complainant is a defense.").

(c) Avatar – An avatar is a three-dimensional character which represents a real person in the virtual world.<sup>258</sup> The avatar need not resemble human form in order to meet this definition.<sup>259</sup>

(d) Avatar Registration – A user may have an avatar representing any age; however, the user must register the avatar using their fingerprint. The creators of the virtual reality must code a way for users to access another user's real age in order for subdivision 5 to be applicable.

### **Subdivision 2. Conduct.**

(1) Any actor, who is eighteen years of age or older, that participates in any of the following acts via proxy of their avatar to any other avatar that is controlled by a child user is guilty of sexual misconduct with a child in virtual reality:

(a) Sexual contact with any part of the child's avatar, with or without haptic technology.

(b) Sexual solicitation of a child to perform sexual conduct.

(c) Communication with a child describing sexual acts.

*Comment: Defining full immersion in virtual realities sets these environments apart from their close counterparts, acknowledging that the illusion of embodiment is specific to immersive virtual environments. The definition and acknowledgment of avatars will legitimize the proxy relationship. The conduct definitions presumably solve the problem of Minnesota Criminal Statutes that require physical touch, penetration, and interactions with a victim's human body.*

**Subdivision 3. Mens Rea.** An actor must have the intent of committing the specific act directed at the child or children.

**Subdivision 4. Harm.** There does not need to be actual physical harm to the actual child or to his or her avatar. Psychological harm constitutes criminal harm for purposes of this statute.

Psychological harm can be, but is not limited to, excessive stress following the event, inability to cope with the event, resulting in diminished

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<sup>258</sup> *What is Avatar*, IGI GLOBAL, <https://www.igi-global.com/dictionary/playing-better-worse/2043> [<https://perma.cc/77CK-F66G>].

<sup>259</sup> *See generally* Andrey Krekhov, Sebastian Cmentowski, & Jens Krüger, *The VR Illusion That Makes You Have A Spider's Body*, MIT TECH. REV.: HUMANS AND TECHNOLOGY (July 24, 2019), <https://www.technologyreview.com/s/613976/a-vr-illusion-that-makes-us-think-we-have-a-spiders-body-could-change-gaming/> [<https://perma.cc/FGT5-MUWW>] (discussing how the illusion of embodiment extends even when a human is using an animal's body as avatar).

school attendance, symptoms of withdrawal, or a trauma-diagnosis from a licensed medical professional. Psychological harm must be coupled with a showing of causation relating to the harm to the conduct discussed above.

*Comment: This addresses the fact there will likely not be physical harm to the child or the avatar; however, the feeling of violation will be real.*

#### **Subdivision 5. Defenses.**

(1) **Mistake of age.** Mistake of age is not a defense if the virtual reality program in which the criminal act has been committed requires the user to submit a code verifying the user's age to others, the victim misrepresented his or her age using this code, and the defendant honestly and reasonably relied on this misrepresentation in participating in the program.

(2) **Third Party Use of Avatar.** There is a presumption that the user is in control of his or her specific avatar at all times. This presumption can be rebutted by the actor showing, by a preponderance of the evidence, that (1) someone else had access to the avatar; and (2) the user was not in a location at the time the crime occurred to have access to his or her avatar.

#### **Subdivision 6. Punishment.**

Violation of this statute, without the use of haptic technology, shall result in a penalty of a felony punishable by up to twenty years in prison, a \$10,000 fine, and possible prohibition from all virtual realities.

Violation of this statute, with the use of haptic technology, shall result in a penalty of a felony punishable by up to thirty years in prison, a \$20,000 fine, and lifetime prohibition from all virtual realities.

Violation of this statute, with or without the use of haptic technology, will require the actor to register as a sex offender pursuant to Minnesota Statute section 243.166.<sup>260</sup>

## VII. CONCLUSION

The virtual reality worlds are going to become an extremely attractive option for humans, as they will be worlds that can be controlled by the push of a button,<sup>261</sup> giving people power they have never known. The amount of people accessing these virtual worlds will only continue to grow, which means crimes will occur as they do in real life society. Society and the state legislatures need to be particularly concerned with protecting children in

<sup>260</sup> See MINN. STAT. § 243.166 subd. 1(b) (2019) (outlining the conditions under which a person convicted of a predatory offense, including sex crimes, must register as a sex offender).

<sup>261</sup> See Anusha Subramanian, *Why the Military*, ISA-VIT BLOG (Aug. 1, 2018), <https://blog.isavit.club/2018/08/01/whythemilitary/> [<https://perma.cc/HG5L-3KG9>].



these virtual realities, especially from sexual predators. Minnesota's current statutes will not provide adequate protection because the existing statutes are not well-defined enough to apply to virtual reality conduct concerning users' proxy of avatars that do not necessarily represent true age. Inevitably, there are going to be challenges to drafting legislation including constitutional and procedural considerations. However, these challenges should not stop the Minnesota Legislature from the unique and important opportunity to be a leader in a world that is advancing at an exponential rate.

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