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**VIRTUAL INDECENT ASSAULT: TIME FOR THE
CRIMINAL LAW TO ENTER THE REALM OF
VIRTUAL REALITY**

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Abstract

Virtual reality is going to play a large role in the future of society. It has the potential to provide a new medium of communication that will allow communities, businesses and recreation to all extend into the virtual realm. As with any emerging technology, the law must decide how to respond. When the technology throws into question what the law considers to be real, we are starting from a relatively clean slate. The purpose of this paper is to consider the extent to which virtual acts can cause real harm to a user and analyse whether the potential for harm would justify the intervention of the criminal law into virtual worlds. This question is approached through the case study of virtual indecent assault. This paper argues that the potential harm of virtual indecent assault justifies the intervention of the criminal law. In light of this conclusion, this paper also aims to outline a set of principles that can shape the criminal law's response. These principles are applied in the evaluation of the different methods of criminalisation that would be available in the context of virtual indecent assault.

Key Words: virtual reality, indecent assault, criminalisation

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I Introduction

In 2016, a woman named Jordan Belamire was the victim of a virtual sexual assault.¹ Her viral blog post describing the incident triggered the legal and virtual reality communities to consider the potential of virtual acts to cause real harm. We are experiencing the dawn of virtual technology. Stories such as Belamire's give us a glimpse into the issues that must be dealt with and the questions that will need to be addressed. To understand these issues it is necessary to understand the potential of the complicated virtual reality industry.

Many of these issues mirror those that came with the development of the internet. I am concerned with the particular issues that emerge from virtual reality's unique feature: the complete immersion of the user. Virtual reality's aim is to trick the user's mind into thinking that their virtual experiences are real. Studies have shown that subjects who are slapped in virtual reality respond with skin conductance and heart rate levels as if they were actually slapped.² The law has not yet indicated at what stage virtual acts will feel sufficiently real for it to intervene. Once I have explained what virtual reality is, I will build a case for the criminalisation of certain virtual acts. I will approach this issue by answering the more specific question of whether the law could and should hold an actor criminally liable for committing an indecent assault in a virtual world. This requires consideration of the real world offence of indecent assault under s 135 of the Crimes Act. I will argue that the criminal law must engage virtual reality on the basis that virtual indecent assault can cause real harm.

In light of the conclusion, it is then necessary to explore how the law could criminalise virtual acts. I outline principles that should underpin any action taken by the criminal law in an effort to effectively prevent and punish this harm. The principles are developed in an effort to manage the complex and intricate issues that will be faced in criminalising virtual indecent assault. They also apply to virtual reality generally and should be used to build a

¹ Jordan Belamire "My First Virtual Reality Groping" (6 October 2016) Medium <www.medium.com>.

² Mark A Lemley and Eugene Volokh "Law, Virtual Reality, and Augmented Reality" (2018) 166 UPALRev 1051 at 1065.

foundation from which the next steps can be based. I will apply these principles to evaluate which possible criminalisation method of virtual indecent assault would be most appropriate.

Although none of the methods suggested are perfect, the hope is to provide an entry point for the type of analysis that will need to be undertaken. I do not propose that the criminal law is the only vehicle to prevent and punish unacceptable virtual actions, rather that it must be considered a viable option. I accept that this discussion raises some questions that cannot be answered in the scope of this paper. Ultimately, the most important starting point is the acknowledgement that real harm can result from virtual acts. This fact should form the backbone of any future action.

II Understanding Virtual Reality

A A Working Definition of Virtual Reality

The term "cross-reality" refers to multiple forms of technology that manipulate a user's reality. The different paradigms of mixed reality sit on what has been labelled a reality-virtuality continuum.³ This continuum is a scale. At one end is technology that help users interact with the real world. At the other is technology where users interact with an entirely virtual world. I am concerned with the virtual end of the spectrum. Virtual reality allows the user to embody an avatar and then interact with their virtual environment. A working definition of virtual reality that is appropriate in this context is that developed by Frederick Brooks:⁴

Virtual Reality (VR) requires three real features: (i) real-time rendering with viewpoint changes as head moves, (ii) real space, i.e. either concrete or abstract 3D virtual

³ Frank Steinicke *Being Really Virtual: Immersive Natives and the Future of Virtual Reality* (1st ed, Springer International Publishing, Switzerland, 2016) at 5.

⁴ Steinicke, above n 3, at viii.

environments, and (iii) real interaction, i.e. possible direct manipulation of virtual objects.

Brooks' definition is not completely comprehensive for the purposes of this paper. I am concerned with virtual environments that are accessible to multiple users simultaneously. Users must also have a strong degree of individual autonomy in deciding how they will interact with the environment and other users. These two features will supplement Brooks' definition.

The form of virtual technology I consider does not include haptic technology. The use of haptic technology provides an extreme form of virtual immersion where an avatar's sense of touch is felt directly by the user who is wearing a full or partial body suit. I intend to demonstrate that actual harm can result from virtual acts without the use of haptic technology. One should, however, keep in mind that with haptics on the horizon, the intensity of immersion is only going to increase.

B The Significance of the Cross Reality Industry

The virtual reality industry continues to develop and grow at a rapid pace. New Zealand's cross reality sector will reach over NZD 320,000,000 in annual revenue and employ double the number of people by 2020.⁵ In 2014, Facebook bought Oculus VR for USD 2,300,000,000. This illustrated significant confidence in the future of the technology. Another significant event was the release of the Google "Cardboard". In 2014 Google introduced the affordable and accessible form of virtual reality to the world, named after what the product is primarily made of. The cheap box when combined with a phone and 360 degree videos, allowed for a passive virtual reality experience.⁶ 2016 is regarded as the breakthrough year for the cross reality sector with the release of four major virtual

⁵ New Zealand VR/AR Association "Virtual Gets Real: The Explosion of Cross Reality in New Zealand" (September 2017) NZVRARA < <http://www.nzvrara.nz/wp-content/uploads/2017/10/NZVRARA-Report-One-VIRTUAL-GETS-REAL-Oct2017.pdf>> at 91.

⁶ Alexandra Lange "The Magic of a Cardboard Box" *The New York Times* (online ed, New York, 7 June 2018).

reality hardware platforms.⁷ A 2016 report from Greenlight Insights stated that although growth in the virtual reality sector will be "very modest" through 2018, and in an "inflexion zone" until 2021, it will grow significantly after that point and be a USD 36,000,000,000 industry by 2026.⁸ The turning point is envisaged to be the production of wireless computing headsets.⁹ There is no doubt that the gaming industry is the driving force behind the development of virtual reality. The USD 90,000,000,000 industry will expose a large number people to the unique sensation of entering a virtual realm.¹⁰ The future of virtual reality does, however, extend beyond gaming. It has the potential to act as an extension of everyday life. Shopping, job interviews, business meetings, schooling, medical training and even psychotherapy could all occur in virtual environments.¹¹

C Criminalising Virtual Acts

Complex legal issues are arising as a consequence of the growth in virtual reality. The questions raised echo those that emerged with the development of the internet. Virtual reality has the potential to engage all areas of the law: issues of intellectual property, hacking and privacy will all need to be managed if people are going to invest part of their lives in a virtual environment. These issues have already come to light in programmes that allow free action in virtual worlds such as the game "Second Life". I am concerned with the issues that emerge from the unique element of complete immersion. Immersion is what distinguishes virtual reality from any other communication technology. The extent of immersion will only become more comprehensive as the technology develops. As reality and virtuality are blurred, a user can develop psychological responses to an attack on their virtual body as if it were their own. This issue is pertinent as a user's freedom in virtual environments allows – and at times encourages – harmful behaviour. Anonymity, lack of

⁷ Lemley and Volokh, above n 2, at 1055.

⁸ Daniel Terdiman "VR Will Be A \$38 Billion Industry by 2026: Report" (11 February 2016) FastCompany <www.fastcompany.com>.

⁹ Terdiman, above n 8.

¹⁰ Dean Takahashi "Worldwide game industry hits \$91 billion in revenues in 2016, with mobile the clear leader" (1 December 2016) Venture Beat <www.venturebeat.com>.

¹¹ Lemley and Volokh, above n 2, at 1055.

consequence and gaming culture have already led to numerous sexual harassment incidents in virtual worlds. This is why I focus on virtual acts that would constitute indecent assault if the act was committed in the real world. The surrounding discussion and underlying questions, are however, also applicable to other offences that could be committed in virtual worlds.

The criminal law's intervention into virtual environments is a challenging concept. What happens in the virtual world would no longer be understood to stay in the virtual world. Any regulation that one imposes on virtual environments requires a policy decision as to what role immersive virtual environments should hold in society. The intervention of the criminal law is only one of many options that may be adopted in regulating virtual actions. Virtual reality developers should also take responsibility for punishing offenders. Users could be given warnings, face punishment within the virtual environment or be banned from the environment entirely. Some platforms have already introduced a personal bubble, where if a user interferes with another user's personal space, they disappear from the victim's sight.¹² Computer code is a form of law that can be employed to manage these issues.¹³ There are, however, situations where the harm caused will be serious enough to require the criminal law to intervene.

III A Case for Criminalisation: The Harm of Virtual Indecent Assault

A The Issue

In 2018, virtual reality for the consumer is still in its early stages and not yet established in the mainstream. Virtual environments are accessed through headsets and headphones. One's sense of immersion is limited by graphics and the need to attach the headset to an external computing device. The time is ripe to consider the role the criminal law will play in its development. Legislators should have a grasp of the technology in its early stages.

¹² Katherine Cross "Sexual Assault Enters Virtual Reality" (10 November 2016) [The Conversation <www.theconversation.com/au>](http://www.theconversation.com/au).

¹³ Lemley and Volokh, above n 2, at 1075.

This will allow them to signal their intention that virtual worlds will not exist completely outside of the law. Developers can then work constructively with the expectations of society in mind. The law can help prevent behaviour like virtual indecent assault from being normalised at an early stage where our understanding of the technology and users' attitudes towards it are malleable. I will explain why virtual indecent assault is a useful entry point into this issue of criminalisation with reference to s 135 of the Crimes Act 1961. I then outline the theoretical framework of criminalisation that should be applied in this context before using that framework to demonstrate why the criminal law should intervene.

B Virtual Indecent Assault

In 2016, Jordan Belamire shared her experience of being virtually groped while playing a virtual multi-user game called Quivr.¹⁴ In between a sequence of shooting incoming enemies with a bow and arrow, the avatar of the stranger she was playing with, BigBro442 turned to her and started rubbing her virtual crotch and groin. Belamire later wrote that the incident felt "real" and "violating".¹⁵ The realness of the incident from the perspective of Belamire is what generates the relevance of virtual indecent assault. It is useful for the purposes of clarity to break down the act that occurred in Belamire's story. An avatar controlled by a human groped another avatar controlled by another human within an immersive virtual environment. This is the type of act that is considered in this case study. If this event happened in a street of New Zealand, BigBro442 would be charged under s 135 of the Crimes Act 1961 for indecent assault. I will argue that BigBro442 should be held criminally liable under a similar offence despite the fact that the act occurred in a virtual world.

C Section 135: Indecent Assault

Before considering the possibility of criminalising virtual indecent assault, it is helpful to understand the nature of the offence in the real world. Section 135 of the Crimes Act states,

¹⁴ Belamire, above n 1.

¹⁵ Belamire, above n 1.

"Everyone is liable to imprisonment for a term not exceeding 7 years who indecently assaults another person."¹⁶ Under s 2(1B) of the Crimes Act, one person does an indecent act on another person whether they do an indecent act with or on the other person; or induces or permits the other person to do an indecent act with or on them.¹⁷ The word "indecent" is taken as the ordinary word in the English language.¹⁸ The Oxford English Dictionary defines indecent as "unbecoming; highly unsuitable or inappropriate; contrary to the fitness of things; in extremely bad taste; unseemly".¹⁹ In *R v Nazif*, it was stated that "indecent" must be interpreted on the current standards of what is indecent, thereby reflecting the attitudes of the community.²⁰

It should be emphasised that indecent assault can occur through a wide range of physical contact. Assault is the intentional act of applying or attempting to apply force to the person of another.²¹ The lightest touching can be an assault as a matter of law. But it must be intentionally done.²² Physical contact is not a necessary element for a charge of indecent assault. An attempt or threat of applying force is sufficient.²³ In *TS v R*, the defendant exposed himself to the complainant at her front porch while holding the door so she couldn't close it and asked her to have sex with him.²⁴ This was sufficient for the court to classify it as a threat that would have been carried out had the complainant not resisted by closing the door.²⁵ It is clear that emotional and psychological harm arising from the threat is central to the offence. This type of harm remains squarely in focus throughout the following discussion.

¹⁶ Crimes Act 1961, s 135.

¹⁷ Crimes Act 1961, s 2(1B).

¹⁸ *R v Nazif* [1987] 2 NZLR 122 (CA) at [127].

¹⁹ Oxford English Dictionary "indecent, adj" (30 Aug 2018) OED Online <www.oed.com>.

²⁰ *R v Nazif*, above n 18, at [127].

²¹ Crimes Act 1961, s 2.

²² *R v Aylwin* [2007] NZCA 458 at [35].

²³ Crimes Act 1961, s 2.

²⁴ *TS v R* [2012] NZCA 419 at [5].

²⁵ *TS v R*, above n 24, at [7].

D Principles of Criminalisation

In any discussion of criminalisation, a starting point from a liberal perspective is Mill's assertion that "The only purpose for which power can rightfully be exercised over any member of a civilized community against his will, is to prevent harm to others."²⁶ Under Mill's principle, the law's ability to criminalise behaviour is constrained. Feinberg approaches harm from a more open-ended perspective when he states:²⁷

It is always a good reason in support of penal legislation that it would be effective in preventing (eliminating, reducing) harm to persons other than the actor (the one prohibited from acting) and there is no other means that is equally effective at no greater cost to other values.

Both statements recognise that the criminal law should not intervene unless truly needed to prevent harm. Conversely, Patrick Devlin would argue that our starting point should be wrongfulness. Devlin writes:²⁸

It is not possible to set theoretical limits on the power of the state to legislate against immorality...or to define inflexible areas of morality into which the law is in no circumstances allowed to enter.

I will therefore approach the question of criminalisation of virtual indecent assault through a discussion of both harm and wrongfulness. Simester and von Hirsch support this approach noting that, "an exclusive reliance on harm is apt to mislead. It diverts attention from the more general inquiry when we should prohibit wrongfulness."²⁹

²⁶ John Stuart Mill *On Liberty* (Cambridge University Press, New York, 2012) at 22.

²⁷ J Feinberg *The Moral Limits of the Criminal Law, Vol. 1: Harm to Others* (Oxford University Press, New York, 1984) at 26.

²⁸ Patrick Devlin *The Enforcement of Morals* (Oxford University Press, Oxford, 1987) as cited in AP Simester and A von Hirsch *Crimes, Harms and Wrongs* (Hart Publishing, Oxford, 2011) at 21.

²⁹ AP Simester and A von Hirsch *Crimes, Harms and Wrongs* (Hart Publishing, Oxford, 2011) at 21.

E Identifying Real Acts

Unique to a criminalisation analysis in the context of virtual reality is the underlying need to establish that certain virtual acts are real. There is a concept called the magic circle that categorises virtual actions.³⁰ Purely virtual acts that are only significant within virtual worlds lie within the magic circle and cannot be considered real. These acts are said to have intravirtual effects.³¹ Acts outside that circle have extravirtual effects. Extravirtual effects are those that stem from a virtual action but have consequences that carry over into the real world. Only virtual acts which have extravirtual effects can qualify as real acts.³² Although this distinction is useful, the category of intravirtual acts is limited. There is strong evidence provided below that most virtual acts carried out in immersive environments will have extravirtual effects on the user. Once virtual acts are considered to be real as a result of the consequences that follow, criminalisation is then dependent on the nature of those consequences.

F Criminalisation on the Basis of Harm

In light of s 135, emotional and psychological trauma should be seen as the harmful consequence that determines the gravity of indecent assault. This recognition immediately diminishes the role of physical force in the offence, narrowing the void between real and virtual indecent assault. The conclusion that virtual indecent assault causes real psychological harm then bridges this void. This connection justifies the interference of the criminal law.

1 What happens in the virtual world does not stay in the virtual world

³⁰ Joshua Fairfield "The Magic Circle" (2009) 11 Vand J Ent & Tech L 823 at 824.

³¹ JH Soraker "Virtual Worlds and Their Challenge to Philosophy: Understanding the 'Intravirtual' and the 'Extravirtual'" (2012) 43 Metaphilosophy 499 at 505.

³² Soraker, above n 31, at 505.

In Jordan Belamire's blog she describes the intense sensation of standing on a cliff's edge as her first experience of virtual reality. The same could be said for the virtual groping that followed: "the public virtual chasing and groping happened a full week ago and I'm still thinking about it."³³ Belamire is not alone in being shocked by the sensation of virtual reality. Multiple studies have come to the conclusion that cognitively speaking, there is little to no difference between virtual and real events as far as the nervous system is concerned. This is why virtual realities are possible in the first place.³⁴ One common virtual reality experiment asks the subject who is immersed to stand at the edge of a deep pit. They are instructed to lean over the edge. In order to enhance the illusion the user stands on a piece of wood three centimetres above the ground. Despite the knowledge that they are not about to fall into a deep pit, the subjects nevertheless show increased signs of stress through increases in heart rate and skin conductance.³⁵

Physiological responses to virtual actions are mirrored by psychological responses. A study that involved a virtual variation of the famous Milgram Shock experiment, found that humans tend to respond realistically at physiological and behavioural levels in interaction with virtual characters notwithstanding their certainty that they are not real.³⁶ In this experiment, the subject who is immersed in virtual reality knows that they are only administering an electric shock to a virtual person. Nevertheless, the physiological responses of subjects resemble that of subjects who know they are administering an electric shock to a real person.³⁷ These studies demonstrate that we cannot discount the real physiological and psychological effects actions in virtual reality can have on a user.

2 The special harm of indecent assault

³³ Belamire, above n 1.

³⁴ Roland Wojak "Virtual Reality: The Moral Status of Virtual Actions" (Masters Thesis, Colorado State University, 2012) at 33.

³⁵ Michael Madary and Thomas Metzinger "Real Virtuality: A Code of Ethical Conduct. Recommendations for Good Scientific Practice and the Consumers of VR-Technology" 3 Front Robot AI 3 at 6.

³⁶ Mel Slater and others "A Virtual Reprise of the Stanley Milgram Obedience Experiment" (2006) 1 PLOS ONE 1 at 2.

³⁷ Slater, above n 36, at 1.

An act of indecent assault in a virtual environment has the potential to cause the user extreme extravirtual harm. This is explained through consideration of the harm of indecent assault in the real world. The psychological harm of sexual offences derives from the compromise to one's physical integrity. This compromise is inextricably linked to one's emotional and psychological state and therefore one's personality and sense of self.³⁸ This link between the physical and the deeply personal establishes the special wrong that is committed when a sexual offence occurs.³⁹ Sexual violation erodes sexual autonomy and sexual choice. Sexuality is not a physical thing but a part of one's personality that must be voluntarily expressed.⁴⁰ Indecent assault removes one's ability to control what is deeply personal.⁴¹ It is a violation of one's sense of agency. The authors of the 1983 rape study concluded that:⁴²

Rape is an experience which shakes the foundations of the lives of the victims. For many its effect is a long term one, impairing their capacity for personal relationships, alternating their behaviour and values and generating fear.

Indecent assault, although not as severe a violation as rape, can also shake the foundations of one's life.

In summary, the harm of indecent assault derives from the compromise of bodily integrity and manifests in the effect on one's individual sense of agency. The link between bodily integrity and agency is exactly what is manipulated during a period of virtual immersion. Here lies the vulnerability of a victim of virtual indecent assault. The link between the two central concepts of embodiment and agency should be examined to demonstrate the potential of this vulnerability.

³⁸ M Childs "Sexual Autonomy and the Law" 2001 64 MLR 309 at 311.

³⁹ Elisabeth McDonald and Yvette Tinsley *Real Rape, Real Justice* (Victoria University Press, Wellington, 2011) at 418.

⁴⁰ At 418.

⁴¹ At 418.

⁴² Warren Young *Rape Study Volume 1: A Discussion of Law and Practice* (Department of Justice, 1983) at 34 as cited in McDonald and Tinsley, above n 39, at 418.

The effectiveness of virtual reality hinges on the illusion of embodiment. Virtual reality takes a user's sense of self and places it within the virtual body. By tracking the movements of the user and rendering the virtual body to copy those movements,⁴³ the body becomes the user's own.⁴⁴ The operating elements of a virtual user can be divided into three. The user's actual body controls a virtual body, whilst the user's sense of self is transported between the two. The actual body still plays an active role as its movements trigger the movements of a virtual being. Virtual reality establishes a relationship between a person and their avatar as a sort of mind-body dualism, where the body is not a corporeal body, but a virtual one.⁴⁵ The necessary corollary is that what happens to a virtual body could have a similar effect on one's self as if the same thing had happened to a physical body.

The user's sense of agency is manipulated to create this illusion of embodiment. The strength of the connection between one's mind and virtual body was emphasised in a study initiated by Nick Yee and Jeremy Bailenson who developed a theory labelled the Proteus Effect.⁴⁶ They found that the appearance of the avatar the user embodied altered their behaviour directly in line with their preconceived beliefs of how someone of that appearance would act.⁴⁷ Another study found that subjects who embodied older versions of themselves over a long period of time showed a tendency to allocate more money to their retirement fund after leaving the virtual environment.⁴⁸ This indicates that one's sense of self in a virtual world manipulates one's sense of self post-immersion in the real world. Users who are immersed and have built second lives with their virtual bodies may have such a strong sense of agency that it is indistinguishable from their real bodies. Michael Madary noted that depersonalisation disorder is relevant here because virtual reality's underlying purpose is to generate realness. Even though users know their virtual body is not real, the illusionary feelings can be over powering as one's agency becomes vulnerable

⁴³ Wojak, above n 34, at 12.

⁴⁴ At 14.

⁴⁵ At 26.

⁴⁶ Nick Yee and Jeremy Bailenson "The Proteus Effect: The Effect of Transformed Self-Representation on Behavior" (2007) 33 *Human Communication Research* 271 at 271.

⁴⁷ Yee and Bailenson, above n 46, at 274.

⁴⁸ Madary and Metzinger, above n 35, at 7.

to manipulation.⁴⁹ There is therefore potential for one's sense of agency and bodily integrity to be just as vulnerable in virtual environments as in reality. Although more research is needed, this analysis clearly shows that real harm can occur from virtual indecent assault.

It could be argued that a user's ability to remove a headset justifies not treating virtual acts of indecent assault seriously, but this is not a strong counter argument. This solution infringes a user's freedom within a virtual environment. More importantly, one's ability to escape a situation does not change the culpability of the offender. In the cases of indecent assault in reality, a victim may have the ability to escape physically yet this does not occur out of fear or hesitancy. The same difficulties apply in the virtual world. Removing a headset when immersed in virtual environments is not instinctual for users due to the illusion of embodiment and a distorted sense of agency. Furthermore, even if a victim does escape, emotional harm may still result from the experience.

G Criminalisation on the Basis of Wrongfulness

Virtual environments are sometimes perceived as places where morality does not extend, a place for people to purge their desires. This perspective feeds the argument that an analysis of the morality of virtual actions is not necessary as it runs against the purpose of a virtual world. This is, however, based on a narrow understanding of what virtual environments could be used for in the future and the harm that can be caused. Indeed, certain virtual environments that involve combat games for example, may allow the user to intentionally assault another avatar. Users will consent to those actions occurring when they enter the environment. Many environments, however, will not be designed for users to have free rein. Consent and different standards of acceptable behaviour within a virtual environment do not completely remove morality from virtual reality. The potential of real harm immediately means wrongfulness of virtual acts can and should be considered.

⁴⁹ Madary and Metzinger, above n 35, at 1.

The ambiguous relationship between virtual worlds and morality have led writers to couch their analysis of wrongfulness within a harm-based approach. Roland Wojak justifies his discussion of the moral wrongfulness of actions in virtual environments through the acknowledgement of real world harm. He stresses that virtual interactions are still between real people when stating:⁵⁰

...regardless of how the self is characterized, there is reason to believe that it can extend or be affected by actions that take place within virtual worlds, and as such, those actions should be objects of moral consideration.

Ashley John Craft builds upon Wojak's statement when asserting:⁵¹

...users have the same de facto duties towards each other when they interact within virtual spaces as they do when writing in print, talking over the telephone, or meeting in person, they are, after all, still interacting with another human being.

On this analysis, harm is placed at the forefront. Morality is subject to the presence of harm. This is consistent with Simester and von Hirsch's assertion that for certain actions, the wrong derives from the harm.⁵²

It is, however, arguable that part of the wrong of virtual indecent assault is distinct from the harm. The wrong can be derived from the decision to capitalise on the distinction between the real and virtual world. This distinction is characterised by the apparent freedom to act in a virtual world without consequence. The behaviour is morally reprehensible thanks to the user's decision to indecently assault another despite their ability to act in any way they wish. Freedom is therefore the necessary condition for a virtual action to be the subject of moral consideration.⁵³ The exploitation of this freedom and the

⁵⁰ Wojak, above n 34, at 57.

⁵¹AJ Craft "Sin in Cyber-Eden: Understanding the Metaphysics and Morals of Virtual Worlds" (2007) 9 *Ethics and Inf Technol* 205 at 216 as cited in Wojak, above n 34, at 84.

⁵² Simester and von Hirsch, above n 29, at 29.

⁵³ Wojak, above n 34, at 90.

thrill users derive from immoral virtual actions is precisely how they transgress ethical boundaries.⁵⁴ Simester and von Hirsch write, "Human beings, instead, are moral but fallible creatures—capable of being motivated by normative appeals, but sometimes inclined to offence nonetheless."⁵⁵ It is in virtual reality where humans may forget morality and be inclined to offend in ignorance of the harm they cause. Criminalisation would signal widespread moral disapproval of this behaviour, reaffirming morality as a deterrent in virtual worlds. The concept of deterrence complements this analysis of wrongfulness. The fact that certain users act virtually in ways they would never in reality solely because they do not feel morally bound, is further justification for legal intervention. This is necessary when one considers the potential for harm.

The wrong of virtual indecent assault also derives from the harm to wider society. The undertaking of virtual indecent assault reflects an unacceptable attitude towards sexual offences and sexual integrity. Much-needed societal condemnation and growing awareness of sexual offending could be eroded if we allow these virtual acts to remain unpunished. Allowing such behaviour to occur in a virtual world only enhances a societal structure where female sexual agency is already undermined by patriarchal ideologies.⁵⁶ This process would completely run against the flow of the current progress in speaking up against sexual assault and exposing fundamental issues in society's treatment of women. Attitudes adopted in immersive virtual worlds have already been shown to carry over into the real world. Criminalisation of virtual indecent assault would prevent further distortion of attitudes towards sexual violence and set a clear standard of virtual behaviour.

IV The Principles of Criminalising Virtual Acts

It has been established that real harm can result from virtual acts. This justifies the intervention of the criminal law into virtual reality. Real action needs to be taken to respond

⁵⁴ At 92.

⁵⁵ Simester and von Hirsch, above n 29, at 14.

⁵⁶ John Danaher "The Law and Ethics of Virtual Sexual Assault" in W Barfield and M Blitz *The Law of Virtual and Augmented Reality* (Edward Elgar Publishers, Cheltenham, 2018) (forthcoming) at 18.

to this real harm. The wrongfulness of certain virtual acts and the concept of deterrence support this intervention. The law will need guidance and careful management as it engages with the continuously developing and complex world of virtual technology. I have developed a set of principles that should be followed in the creation of any legal instrument that criminalises virtual actions such as indecent assault. These principles are constructed with the goal of facilitating the effective prevention and punishment of harmful virtual behaviour. They are directly tied to the unique difficulties the law will face when engaging with virtual indecent assault. Following the establishment of the principles, I will discuss which form of legal instrument may best facilitate the achievement of these principles in the context of virtual indecent assault. None of the options suggested are perfect. Nevertheless, they all provide possibilities that can be developed and improved upon through further research.

A Principles

1 The law must adequately define virtual reality leaving sufficient scope for future development and change

Law reform is often outrun by technology as regulations address immediate issues with technology that then quickly evolves beyond the scope of the law. This has been labelled the "pacing problem".⁵⁷ A carefully-drafted definition of virtual reality will be necessary to ensure successful management of the technology. Drafting of legislation will require a difficult balancing act of achieving specificity in describing the type of technology the law seeks to control, whilst allowing enough flexibility to cope with technological developments. A possible starting point is the definition used in this paper inspired from Brooks' work:⁵⁸ Virtual reality requires five real features: (i) real-time rendering with viewpoint changes as head moves, (ii) real space, i.e. either concrete or abstract 3D virtual

⁵⁷ Andrew Askland "Introduction: Why Law and Ethics Need to Keep Pace with Emerging Technologies" in Gary E Merchant Branden R Allenby and Joseph R Herkert (eds) *The Growing Gap Between Emerging Technologies and Legal-Ethical Oversight* (Springer, Dordrecht, 2011) at xx.

⁵⁸ Steinicke, above n 3, at 5.

environments, (iii) real interaction, i.e. possible direct manipulation of virtual objects, (iv) autonomy and active decision making by the user (v) multi-user access.

2 Current case law should be used as a guide to application but kept at arm's length.

The balanced approach towards defining virtual reality must also be adopted in the adjustment of legal tests to achieve congruency with their virtual contexts. Legal tests from the real world cannot haphazardly be applied due to the different circumstances of where the act takes place. Once again, a balance will have to be struck between specificity and flexibility. The example of virtual indecent assault highlights the type of issues that will be confronted. The requirement of assault of the intentional or attempted application of force upon another's body must now include virtual bodies and virtual force. The language used must reflect the capabilities of the virtual environment itself and therefore could not become overly specific. Any law would need to acknowledge the virtuality of the acts, whilst explaining the acts in simple and clear terms. Interestingly, it has been suggested that the word power rather than force would be more appropriate as a key concept of indecent assault in the real world.⁵⁹ Power is broader than physical force and leaves room for psychological aspects to influence the law.⁶⁰ This would further narrow the void between indecent assault in reality and virtual reality as the physical element is diminished. This language would certainly be more appropriate in a virtual world. This is the kind of linguistic decision that will have to be carefully considered.

A more complex element is what constitutes "indecent" in a virtual environment. This demonstrates why current law for physical acts should be kept at arm's length. Under current law, what is considered indecent is gauged by what a jury considers to be within current standards of indecency.⁶¹ This test faces difficulty when applied to virtual reality particularly if there is not widespread understanding of what constitutes virtual reality or what the experience of being in an immersive environment is like. Community standards

⁵⁹ Childs, above n 38, at 149.

⁶⁰ Childs, above n 38, at 149.

⁶¹ *R v Nazif*, above n 18 at [127].

of what is decent in reality cannot easily be applied to virtuality. The differences between reality and virtuality allow for the argument that there should be a higher threshold for what constitutes an indecent act in the virtual world. Each virtual environment will have different standards of what is acceptable. This will vary depending on the environment's purpose, the demographic of the users and what they consent to when entering the environment. The social contract has the potential to be rewritten. The concept of a new social contract and the issue of what one consents to when entering a virtual world exposes a raft of questions that requires discussion beyond the scope of this paper. It will be necessary to determine at what stage the law should step in if the social contract is distorted to an offensive extent. Nevertheless at this early stage, when faced with an issue of defining "indecent" in a virtual context, a good starting point is the acknowledgement that real harm can result from virtual acts. This baseline would at least provide a safety net for the standards of indecency. From there any legal test can be developed while remaining loyal to the need to prevent harm.

3 Any new law or regulation must be flexible, amenable and adopt technology-neutral language

Any legal instrument that is developed to engage with virtual environments must be able to react to any developments in the technology. This goes beyond the definition of virtual reality and will depend on the form and wider content of the instrument. Technology-neutral language can be adopted throughout to prevent the law from becoming stagnant and quickly anachronistic. This language focus on the wider type of technology as a whole rather than a specific piece of technology.⁶² It must, however, be specific enough in order to address the issues the law faces. An example that is pertinent to virtual indecent assault is the development of haptic technology. The consequences of virtual indecent assault are severe and should be responded to even in the absence of the physical element haptic technology provides. The law must, however, keep in mind that haptic technology is on the horizon. Once this technology develops, there will be a significant shift in the nature of

⁶² Lyria Bennett Moses "Sui Generis Rules" in Gary E Marchant, Braden R Allenby and Joseph R Herkert (eds) *The Growing Gap Between Emerging Technologies and Legal-Ethical Oversight* (Springer, Dordrecht, 2011) at 90.

virtual technology. The law should not ignore this foreseeable development. Any legal instrument that is created should be comprehensive and flexible in order to cope with the use of haptics.

4 The laws intent should be clearly indicated while it waits for the appropriate time to engage

The law must decide whether it pre-emptively legislates on the issues that are suspected to arise. One of the benefits of this decision is the law can then frame how the technology will develop along with users' attitudes towards it. It also provides a legal framework for developers to work within, preventing unforeseen legal barriers at a later stage. On the other hand, it may be beneficial to wait until the technology has passed what has been labelled an "impact threshold" before engaging.⁶³ This threshold rests where society and legislators have a higher level of understanding of the technology so issues can be more specifically identified and managed. Determining when the technology has reached that threshold is difficult when it is developing at a breakneck pace. The impact threshold of virtual reality has arguably not yet arrived. It is, however, not far away. I would prioritise the need to become more aware of the role that virtual technology will play in society over immediate action. It will be important not to approach the issue so narrowly that any law becomes irrelevant after a sudden change in the technology. Waiting for the impact threshold is therefore a suitable and perhaps necessary option while further research and planning is undertaken.

5 If the decision is made to delay the imposition of any legislation until the impact threshold, other active steps must be undertaken in the meantime.

If the implementation of legislation is not in the short term, in the meantime researchers and those who develop the law should maintain a list of unknowns as they emerge.⁶⁴ For

⁶³ Askland, above n 57, at xv.

⁶⁴ David Rejeski "Public Policy on the Technological Frontier" in Gary E Marchant, Braden R Allenby and Joseph R Herkert (eds) *The Growing Gap Between Emerging Technologies and Legal-Ethical Oversight* (Springer, Dordrecht, 2011) at 53.

virtual reality, the list of what is unknown about the future of the technology is expansive and continuously evolving. These unknowns, if documented, prevent assumptions from being made about the technology and widen one's understanding of what is possible. To complement this list of unknowns, a system of categorising the forms of cross-reality should be created. These steps delay the implementation of the criminal law on virtual reality. Nevertheless, this may be a good strategy in building a foundation for the law to act upon.

6 Issues of jurisdiction should not act as a barrier to criminalisation

One of the unknowns is how the law will regulate virtual environments that are accessed from all around the world. An indecent assault may be initiated by someone accessing the environment in the United States, while the victim accesses the environment from New Zealand. It is unlikely the law will be able to enforce any criminal punishment on a foreign actor or that a state will be willing to extradite that actor for such an offence. It is unclear where the law will consider the act to have taken place. Is it from where the actor or the victim is accessing the environment? Or perhaps it is where the host server of the virtual platform is located? A similar issue has arisen in the enforcement of cybercrime and online harassment. This problem stresses the importance of virtual reality developers in regulating harmful behaviour. Enforcement through computer code does not see national boundaries as the criminal law would. Merely placing responsibility on platform owners, however, will not be sufficient to prevent the harm that can be caused. Although difficulties with jurisdiction will arise, this should not be a barrier to criminalisation. New Zealand perpetrators could be convicted of the offence under New Zealand law, deterring others users from committing such virtual acts.

7 A strong point of communication between legislators and virtual reality developers should be established while obligations are imposed upon them

Alongside the issue of jurisdiction are issues of enforcement. These challenges can only be approached if a strong relationship between virtual reality developers and the law-making

authority exists. This will allow for a constructive dialogue on the liability of virtual reality developers and help 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. In this respect, once measures are put in place, it may in fact be easier to enforce the law. This in itself raises privacy issues which are outside the scope of this paper.

A further issue that platform developers must actively manage is the ability of minors to enter virtual environments and not present themselves as such. The imposition of age restrictions on certain environments will be necessary along with sufficient protections to enforce those restrictions. It is widely known that children play games with R18 ratings. The consequences of this will be more severe with virtual reality games where children are directly interacting with adults. This is particularly pertinent to indecent assault. The law will have to decide how to treat an actor who interacts inappropriately with an avatar while unaware that the avatar is controlled by a child. Although this issue cannot be satisfactorily explored in this paper, legislators and virtual developers must work together to actively manage this risk.

B Methods of Criminalisation to Facilitate these Principles

1 Amendment to the Crimes Act 1961 to expand the definition of indecent assault in s 135 to include virtual indecent assault

In light of the above principles, an amendment to s 135 would be insufficient to manage the immense complexities that will emerge in criminalising virtual worlds. The need for an adequate definition and the adjustment of legal tests could not be achieved. This would be too narrow a path towards addressing the harm. Furthermore, this only approaches the issue of virtual indecent assault. Action that is taken should aim to build a foundation from which

other virtual issues can also be approached. It is not a possible option to allow the courts to expand the interpretation of current legislation to include virtual acts. Reading in virtual indecent assault into Section 135 of the Crimes Act 1961 would be beyond the scope of judicial interpretation. I do not suggest that real and virtual assaults should be treated synonymously. Nevertheless, as a supplementary measure it would be beneficial to educate judges on the effects of virtual reality so that they are prepared for future issues that arise from the virtual realm.

2 Amendment to the Crimes Act 1961 to include a section for virtual offences

The most comprehensive and perhaps radical approach would be to amend the Crimes Act to include a section on virtual crimes. This would allow for a suitable definition to be established, for adequate legal tests to be created and would make a strong statement condemning virtual acts that cause harm. It would also convey to platform developers that action needs to be taken to facilitate the prevention of harm in their virtual environments. Technology-neutral language could be sufficiently adopted. The Crimes Act may not, however, be completely conducive to the flexibility required for virtual technology. Any drafting of legislation would be hampered by its inability to sufficiently prepare for the future of the technology. This issue could be mitigated by the creation of regulations to run alongside the legislation. This would allow the law to respond to new developments in an efficient manner. Nevertheless, the creation of new legislation to be incorporated into the Crimes Act would be a long and arduous process. I do not think virtual technology is at the stage where this is necessary. Even when it does reach the impact threshold, there will be other ways to prevent harm in the short term. This process may be a long term possibility, but should not be considered the next step in dealing with this issue. Any comprehensive legislative scheme should be developed through stepping stones that can respond to developments in the technology. It is therefore necessary to identify a less extreme step that would still achieve the principles and prevent the harm that is already occurring.

3 Amend the Harmful Digital Communications Act 2015 to encapsulate communication through immersive virtual environments

A more practical yet effective solution would be to amend the Harmful Digital Communications Act 2015 to include virtual indecent assault. The purpose of the Act is to deter, prevent, and mitigate harm caused to individuals by digital communications, and to provide victims of harmful digital communications with a quick and efficient means of redress.⁶⁵ The Act defines harm as serious emotional distress.⁶⁶ Digital communication is defined as any form of electronic communication and includes any text message, writing, photograph, picture, recording, or other matter that is communicated electronically.⁶⁷ This definition is suitably broad to include virtual interactions. Section 6 of the Act lists ten communication principles that if broken may allow the court to make an order listed in s 19. The Act also regulates the liability of the online server host.⁶⁸ Although it is clear that the Act would have to be heavily amended to encompass virtual reality, the framework is congruent with the principles I have outlined. The communication principles if expanded upon would provide a flexible way of managing the complexities of virtual reality. This principled form of legislation is suitable for the pre "impact threshold" technology as they would not need to be as specifically constructed as any provision in the Crimes Act. The regulation on server hosts could be adapted and reapplied to virtual platform hosts. The empowerment provisions including the orders the court can make under the Act would also have to be changed in order to apply to virtual environments. Most importantly, however, the serious emotional harm caused by online content that the Act aims to prevent, resembles the harm of virtual indecent assault.

If it was decided that legislators wanted to limit the Harmful Digital Communications Act to the scope it currently has, then a similar piece of legislation could be created specifically for virtual reality. The use of communications principles, the rules concerning liability of

⁶⁵ Harmful Digital Communications Act 2015, s 3.

⁶⁶ Section 4.

⁶⁷ Section 4.

⁶⁸ Section 23.

server hosts and the creation of particular court orders could be replicated in a virtual context. This would prevent the Act becoming cluttered in attempting to manage too many forms of digital technology. It would also be more effective in satisfactorily defining virtual technology and maintaining flexibility. Although this option is not perfect, it is arguably the most appropriate means of achieving the principles I have established. These principles and the discussion of their implementation should be used as a basis for further research and discussion.

4 The potential of two-step prohibition

Two-step prohibition is a potential form of criminalisation that may be developed as a part of the legislative instruments discussed. Two-step prohibition involves the issuance of civil prohibitory orders against persons who have been found engaged in, or who are expected to engage in, undesirable conduct. A breach of that order then becomes a criminal offence.⁶⁹ The content of the civil order can vary, but may require the actor to cease from further conduct of the same kind, or may prevent the actor from entering an environment where they are likely to commit this conduct.⁷⁰ Hence the possibility of criminal sanctions only arise in respect of future conduct, not the conduct that gave rise to the civil order.⁷¹ The effectiveness of two-step provisions is the subject of debate. Simester and von Hirsch label them a "radical and problematic device".⁷² They are worth considering in the context of virtual reality, however, due to the issues they seek to resolve. Two-step prohibition is primarily centered on offensive conduct that may be an insufficient wrong in isolation, but sufficient if committed repeatedly. This would therefore be a softer mode of intervention by the criminal law than I have suggested is necessary. The flexible nature of the civil order within a two-step prohibition would, however, help mitigate the complications of virtual reality. In this context, the order at the first stage could involve a banning from the virtual platform. Then if that order was breached criminal punishment would follow.

⁶⁹ Simester and von Hirsch, above n 29, at 213.

⁷⁰ At 213.

⁷¹ At 216.

⁷² At 215.

The appropriateness of a two-step prohibition on indecent or offensive virtual conduct will require a more in-depth analysis. Simester and von Hirsch are critical of the quasi-judicial option as it bypasses certain safeguards that the criminal law imposes to protect individual freedoms.⁷³ In order to prevent users from being subject to such an order undeservedly, platform owners would have to develop comprehensive methods of regulating virtual environments. Furthermore, removing the criminal safeguards may expose users to condemnation by the criminal law solely because they breached the first order by logging into a virtual reality server. This may neglect the question of whether the act was in itself wrongful. It is also arguable at the other end of the spectrum that a civil order does not treat a virtual indecent assault seriously enough in light of the harm that may have occurred. The two-step prohibition would have to be carefully applied to avoid missing the point of criminal intervention. Amidst the obstacles that two-step prohibition must overcome, it is an option that could be cautiously investigated further.

V Conclusion

Online sexual harassment and abuse has been present in society since the birth of the internet. In 2015 New Zealand legislators responded with the somewhat controversial Harmful Digital Communications Act. This legislation attempted to respond to offences that could be committed from a distance through a computer screen. Now the law faces a new problem. With the rise in virtual reality, these offences have entered a third dimension. Virtual worlds must now be regarded as an extension of reality rather than a place of fantasy. I have attempted to outline why the law cannot ignore virtual reality and the problems that come with it through a discussion of virtual indecent assault. It must be acknowledged that real harm can result from virtual acts. On this basis the criminal law can and should intervene in virtual environments. The principles I have established aim to facilitate the criminal laws response to virtual reality. The complexity of the rapidly-developing technology demands this principled approach that remains loyal to the goal of

⁷³ Simester and von Hirsch, above n 29, at 218.

preventing harm. In the first instance, the possible amendment or replication of the Harmful Digital Communications Act 2015 may be one of the best ways of preventing harm caused by virtual indecent assault and satisfying the principles I have established. This is just a small step into a much bigger world of law and virtual reality. In a technology so vast, ever-expanding and at times elusive, small steps will be the smartest way forward.

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